REPORT RESUMES

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THE COOPERATIVE EXPERIMENTAL SUMMER SCHOOL, 1959, 1960 AND 1961. A REPORT.

BY- BOLDEN, WILEY S.

COOPERATIVE EXPERIMENTAL SUMMER SCHOOL, ATLANTA,GA

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AN 8-WEEK NONCREDIT INSTRUCTIONAL PROGRAM CONDUCTED BY FOUR NEGRO UNDERGRADUATE COLLEGES DURING THE SUMMERS OF 1959-61 IS DESCRIBED IN THIS REPORT. THE PROGRAM WAS INTENDED TO IMPROVE THE SCHOOL-RELATED ATTITUDES AND THE READING, ENGLISH COMPOSITION, MATHEMATICS, AND STUDY SKILLS OF HIGH SCHOOL GRADUATES WHO, ALTHOUGH ADMITTED TO THE COLLEGES, WERE DEFICIENT IN THESE AREAS. TO IDENTIFY RELATED TEACHING APPROACHES AND STUDENT CHARACTERISTICS WAS AN ADDITIONAL PROGRAM GOAL. EACH PARTICIPANT WAS GRANTED AN ALL-EXPENSES TUITION SCHOLARSHIP FOR THE SUMMER RESIDENT PROGRAM, AND WAS PROMISED A $400 FRESHMAN-YEAR SCHOLARSHIP IF HE COMPLETED THE PROGRAM SUCCESSFULLY. IN ADDITION TO THE FORMAL INSTRUCTIONAL AND GUIDANCE ASPECTS OF THE PROGRAM, RECREATIONAL, SOCIAL, CULTURAL, AND RELIGIOUS ACTIVITIES WERE CONDUCTED. SCORES FROM TESTS ADMINISTERED TO PARTICIPANTS AT THE BEGINNING OF THE SUMMER WERE COMPARED WITH THEIR SCORES AT THE END OF THE PROGRAM, AND THEIR GRADES DURING THE SCHOOL YEAR AND TEST SCORES IN SEPTEMBER AND MAY WERE COMPARED WITH SIMILAR DATA FROM A CLOSELY MATCHED GROUP OF CONTROL STUDENTS. DATA WERE ALSO GATHERED ON STUDENTS' HOME BACKGROUND, THEIR OPINIONS OF THE PROGRAM, AND THEIR PARTICIPATION IN EXTRACURRICULAR ACTIVITIES. SOME OF THE RESULTS OF THE PROGRAM WERE THAT PARTICIPANTS GENERALLY IMPROVED IN READING AND MATHEMATICS DURING EACH OF THE THREE SUMMERS, AND AT MID-SEMESTER ACHIEVED HIGHER GRADES THAN NONPARTICIPANTS. HOWEVER THIS SUPERIORITY TENDED TO DECREASE DURING THE YEAR. CONTAINED IN APPENDIXES ARE CLASS SYLLABUSES, EXTENSIVE STATISTICAL DATA, AND OTHER RELEVANT MATERIAL. (LB)

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A REPORT: THE COOPERATIVE EXPERIMENTAL SUMMER SCHOOL

1959, 1960, AND 1961

Participating Colleges

Clark College

Morris Brown College

Morehouse College

Spelman College

Atlanta, Georgia
1963

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A REPORT: THE COOPERATIVE EXPERIMENTAL SUMMER SCHOOL

1959, 1960 AND 1961

Prepared by

WILEY S. BOLDEN

Participating Institutions

Clark College
Morehouse College
Morris Brown College
Spelman College

Atlanta, Georgia

June 1963

UD 005 093

The Cooperative Experimental Summer School was made possible through the generosity of an anonymous donor whose support was administered by the Phelps-Stokes Fund.

COOPERATIVE EXPERIMENTAL SUMMER SCHOOL

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A. A. McPheeters, Dean

Edward J. Brantley, Registrar

William Morrell, Business Manager

C. R. Hamilton, Dean of Men

Edith Thomas, Dean of Women

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John Coe, Assistant Treasurer

Irene Asbury, Dean of Women (1959)

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Aaron Brown, Project Director

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Helen Cameron (1960-61)

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Clark College

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Clark College

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Morehouse College

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Christine Farris (1961)
Spelman College

Patricia Fields (1960)
Clark College

LaVerne Graves
Morris Brown College (1959, 1961)

Dorothy Howard (1961)
Clark College

Addie Mitchell (1959, 1961)
Morehouse College

Jeanne Smith (1961)
Spelman College

Billie Williams (1960)
Atlanta University

Eulis Williams (1960)
Atlanta University

Zelma Williams (1960)
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Victoria S. Sutton
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Billie Davis
Washington High School

Lillian Garnett
Howard High School

Margaret Taylor
Washington High School

(1961)

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Price High School

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Howard High School

Earline B. Wood
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Morehouse College

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University of Chicago
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Stetson University
Consultant in Organization and
Administrations.

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*Where not designated, the period of service was for each summer--1959, 1960, and 1961.

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INTRODUCTION

The Cooperative Experimental Summer School, held at the Atlanta University Center during the summers of 1959, 1960, and 1961, was an eight-week non-credit instructional program conducted jointly by the four undergraduate institutions of the Center -- Clark College, Morehouse College, Morris Brown College, and Spelman College. It was designed to increase readiness for college study on the part of high school graduates who met admissions requirements of these colleges but evidenced deficiencies in basic tool subjects. Specifically, the principal objective of the program was to improve the abilities of the students in reading, English composition, basic mathematics and methods of study, and to promote positive changes in their attitudes toward school work.

Eligibility for participation in the program was based upon performance on standardized tests of scholastic aptitude and reading administered to prospective students during their senior year in high school. A new group of participants was selected each summer: ninety for the first and last summers and one hundred for the second summer.

Each participant was officially enrolled as a prefreshman in one of the colleges and was a resident on its campus. Each received an all-expense scholarship for his summer study, and each who completed his studies successfully received a $400 scholarship for his freshman year at the college in which he was enrolled.

The academic curriculum was organized into courses in reading, English composition, and mathematics. Daily instruction was given in classes which comprised approximately 17 students each. Further instruction and guidance were provided through daily clinic sessions, individual and group conferences, and study periods. Complementing these more formal academic aspects of the program were series of social, cultural, and religious activities, and a planned recreational program.

Basically, the research efforts were designed to assess the effectiveness of the summer program at two points--at the end of the summer program and at the end of the regular school term (September through May) following the summer program. At the end of the summer program, outcomes were assessed by comparing the performances of the prefreshman on tests administered at the beginning and end of the summer session. At the end of the freshman year, the effectiveness of the summer program was determined by comparing summer students and their controls in terms of initial and final test performances and semester grades. Initial tests were administered to summer students at the beginning of the summer program and to their controls the following September; the final tests were administered to summer students and their controls in May of the freshman year. To establish a control group each student who participated in the summer program was matched as closely as possible in terms of scholastic aptitude and reading test scores and age with a like-sexed freshman from the college in which he was enrolled.

Other data collected during the course of the study included information about the home backgrounds of the students, their perceptions of the summer program and the freshman year, and records of their participation in extra-curricular activities.

A general coordinator and a staff of six reading teachers, three mathematics teachers, four English teachers, two recreation supervisors, and two testing specialists were appointed for the initial summer program from the faculties of the four participating colleges. The general coordinator and all of the teachers, with one or two exceptions, were re-appointed in ensuing summers in order to ensure continuity in staff performance and instructional methods and procedures. Supplementing these teachers each summer were three teacher assistants in reading and English composition drawn from three feeder high schools in the City of Atlanta. Each summer a new set of teacher assistants was appointed in order to broaden the opportunities for this kind of pedagogical experience for public school English teachers. In addition to the above, a group of six consultants -- four from the School of Education of the University of Chicago, one from Atlanta University, and one from Stetson University -- were asked to give teachical evaluative assistance throughout the program. A committee comprising the presidents of the four participating colleges gave overall direction to the project.

As the project developed from year to year, records of various sorts including the tape recordings of staff meetings and conferences, departmental reports, research reports, progress reports, daily teaching records, testing and evaluation records, and correspondence grew into a huge mass of data which could well afford the basis for several kinds of meaningful reports or studies. For example, a descriptive and interpretive account of the process involved in planning and implementing the project should provide an interesting and instructive example of action research by a college faculty group, or, an item analysis of the responses of the participants on initial tests should yield a useful picture of the specific knowledges and skills characteristic of an element of the entering freshman population at the four colleges. However, the selection of content for the present report reflects the original concern of the research phase of the project: assessing the outcomes of the instructional program and identifying related teaching approaches and student characteristics.

In an effort to keep the volume of the report within reasonable limits, only data considered essential were included; much that might have been enlightening to the reader had to be excluded. Further, to increase readability, a minimum of statistical information is presented in the body of the report. Detailed statistical data are included in the appendixes.

The report is organized into five chapters. Chapter I explains the manner in which the students who participated in the program were selected and describes these students in terms of test results, personal data, and home background data. Chapter II outlines the basic features of the school program and describes, in the teachers' own words, the philosophy objectives, content, and methods that characterized the curriculum. Chapter III sets forth specific questions raised in assessing outcomes and explains the methods employed in seeking answers to these questions. Chapter IV presents findings, conclusions and implications of the study. Chapter V provides a sample of evaluative comments on the summer program that were made by members of the staff at various times during the three years of the project.

This report reflects the efforts of many persons. In addition to the contributions of Richard K. Barksdale who served as General Coordinator of the summer school, Oran W. Eagleson who with the writer shared responsibility for the planning and execution of research, and the summer school staff of teachers and consultants who took part in every phase of the development of the project, the contributions of many others -- the presidents, deans, registrars, business managers, and personnel workers from each of the four participating colleges -- are reflected in this report.

Among persons who gave special assistance in the preparation of this report are Haskell Ward who aided in the analysis of the research data, Willie C. Davis and Willie C. Bolden who read much of the manuscript, Mary Ellen James who typed and mimeographed the report, and J. A. Lockett who facilitated assembling and binding of the report. To all these persons the writer expresses gratitude.

W. S. B.

June, 1963

I. THE PARTICIPANTS

In the sections that follow, the students who participated in the summer programs are described in terms of criteria by which they were selected and in terms of certain general characteristics of the groups: age, sex, states from which they came, and colleges in which they were enrolled. In addition, the students who participated in the 1960 and 1961 programs are described in terms of their responses to selected items on the social environment questionnaire which provided information about their home backgrounds.

Criteria of Selection

Since the project was designed to increase readiness for college work on the part of high school graduates who were potentially capable of academic success in college but who were deficient in reading abilities and skills, it was necessary to define these characteristics in terms of levels of performance on appropriate measures of scholastic aptitude and reading ability. Further, since each summer session began in June, it was necessary to apply these measures well before the end of the preceding school year in order to complete the selection process early enough to facilitate the attendance of the students and planning by the staff. Once the criteria were established, each college employed them in selecting its share of the students. In only a few cases were students selected who failed to meet one or both of the criteria.

The selection of the students who participated in the first summer program began in the spring of 1959 with admissions officers of the four colleges or designated officials administering the selection instruments in conjunction with their recruiting activities. The criteria employed were as follows: (1) A Gamma I.Q. of 90 or above on the Otis Quick-Scoring Tests of Mental Ability, and (2) a score not lower than 42 and not higher than 53 on the Triggs Diagnostic Reading Test.

The Gamma I.Q. of not less than 90 was set as the minimum level of mental ability necessary for academic success because this score had been found to be the average score on this test for entering freshmen at one of the four colleges.

On the Triggs Diagnostic Reading Test a score of 42 is at the 25th percentile of the 9th grade and a score of 53 is at the 49th percentile of the 12th grade in terms of the test norms based on the performance of a representative sample of 9th and 12th grade students who took the test at the beginning of the school year. In designating the 25th percentile of the 9th grade as the minimum score, it was assumed that the summer program would have decreasing effectiveness with students who had greater deficiencies than was indicated by that score. The 49th percentile of the 12th grade was set as the upper limit because evidence of deficiencies became minimal as scores exceeded that point.

In an effort to find a selection procedure that would increase the likelihood of comparable conditions for testing all candidates for the summer program and that would make possible the simultaneous testing of these students and others from whom a control group could be selected, the procedure used in 1959 was abandoned. Students who participated in the 1960 and 1961 summer programs were selected on the basis of tests administered through the Cooperative Intercollegiate Examination Program (CIEP) which is conducted by representatives of the member colleges of the United Negro College Fund and facilitated by the Educational Testing Service. Through this program, the Cooperative School and College Ability Test and the Cooperative Reading Comprehension Tests are administered to high school seniors in the Southern region at about mid-term of each school year to assist in the selection of applicants for college admission and scholarships. Since each year it could be expected that a large proportion of the population of the freshman classes of the four colleges would be made up of students who participated in the CIEP, this program made possible the selection of the summer students and subsequently the control group on the basis of tests administered to both at the same time.

The students who participated in the summer program of 1960 were selected by the following standards: (1) a score not lower than 280 on the SCAT and (2) a score not higher than 58 and not lower than 38 on the Reading Comprehension Test. A score of 280 on the SCAT is approximately one-half standard deviation below the mean of pupils at the end of grade 12 in the norming sample for the test. According to end-of-year test norms for the Reading Comprehension Test, a score of 38 is at the 26th percentile of grade 9 and a score of 54 is at the 50th percentile of grade 12.

The standards for selecting the students who participated in the 1961 summer program were revised by lowering the upper limit and eliminating the lower limit of scores on the Reading Comprehension Test in order to afford a slight increase in the extent of deficiency in reading among the group of students selected for the program. Hence, on the Reading Comprehension Tests, a revision of the edition employed in 1960, the upper limit of reading ability was set at a score of 149. This score is equivalent to a score of 45, or a percentile rank of 18, in terms of the test norms used in the selection of the summer students of 1960. No lower limit was designated for the score on the Reading Comprehension Test. It was assumed that the lower limit of 280 on the SCAT would serve to restrict the extent to which scores on the reading test would fall below grade 9, the level that had been established as the lower limit of reading ability for students selected in 1959 and 1960.

That the summer students of 1959, 1960, and 1961 represented fairly similar populations with respect to scholastic ability and reading ability is suggested by comparisons of their scores on the SCAT and Reading Comprehension Test. While the students of 1959 were not selected on the basis of these tests, SCAT scores and Reading Comprehension scores were available for 31 of these students who had participated in the CIBP; hence, these scores were used in making comparisons among the groups.

The means and standard deviations (shown in parenthesis) of the SCAT scores of the 1959, 1960, and 1961 students are 287.30 (4.8), 298.48 (6.6), and 298.96 (6.6), respectively. Similarly for the

Reading Comprehension Test scores the means and standard deviations are 47.50 (4.8), 47.48 (4.2), and 148.50 (4.4). A score of 148.50 on the revised test is equivalent to a score of 44 on the form of the test used prior to 1961.

General Characteristics

During the three summers of the project, a total of 280 students participated: ninety in 1959, one hundred in 1960, and ninety in 1961. Each participant in each of the summer programs having been graduated from high school at the end of the school term preceding the summer session was registered as prefreshmen in one of the four colleges. The distribution of the summer school enrollment for each year according to sex and college is shown in Table 1 below.

TABLE 1

Distribution of Summer School Enrollment

by Sex and College

College	Number registered each summer								
	1959		1960		1961		Summary		
	Male	Female	Male	Female	Male	Female	Male	Female	All
Clark	13	7	11	9	10	10	34	26	60
Morehouse	25	0	30	0	25	0	80	0	80
Morris Brown	5	15	9	11	5	15	19	41	60
Spelman	0	25	0	30	0	25		80	80
Total	43	47	50	50	40	50	133	147	280
Per Cent							47.5	52.5	100

It will be noted that 20 students each, including males and females, were enrolled at Clark College and Morris Brown College each summer while 25 males and 25 females were enrolled at Morehouse College and Spelman College, respectively, during the summer of 1959 and 1961, and 30 males and 30 females were enrolled at Morehouse College and Spelman College, respectively, during the summer of 1960.

The range of ages among the participants was from 16 to 19 years with 98% of the students less than 19 years of age.

The states from which the students came and the number from each are shown below for the three summers:

	1959	1960	1961	Total
Georgia	69	62	52	183
Alabama	3	14	10	27
Florida	5	6	8	19
North Carolina	2	5	5	12
South Carolina	5	4	3	12
Texas	1	4	6	11
Tennessee	2	3		5
Virginia	2		2	4
Louisiana		1	1	2
Washington, D.C.	1	1		2
Indiana			1	1
Kentucky			1	1
Mississippi			1	1
Total	90	100	90	280

The foregoing data show that 183 of the 280 students, or 65% of the total group, came from the state of Georgia. A further analysis of registration data revealed that of the 183 students who came from Georgia, approximately two-thirds of these came from the city of Atlanta and that two-thirds of all the students came from cities which, according to figures reported in the 1960 United States Census, have populations of over 200,000.

Educational and Cultural Background

Responses to selected items of a questionnaire designed to reveal information about the participants's home background were tabulated. These appear in Appendix A and a description of the instrument and the manner in which it was used in the study is given in Chapter III. Generalizations based upon the responses to these selected items are cited below to provide a picture of certain aspects of the educational and cultural background of the students.

1. The average mother had completed from 12 to 13 years of schooling, the average father 11 to 12.
2. The average sibling with most schooling had completed from 13 to 14 years.
3. The average uncle (or aunt) with most schooling had completed approximately 16 years.
4. More than half of the mothers and fathers were engaged in either professional and managerial occupations (33%) or service occupations (27%) as classified by the Dictionary of

Occupational Titles.[1]

5. More of the mothers were engaged in occupations in each of the categories--professional and managerial, clerical and sales, and service--while more of the fathers were engaged in occupations in each of the categories skilled, semi-skilled, and unskilled.
6. Approximately 84% of both parents were living and 69% were living together.
7. The number of the students who with their parents had set their educational goal at the level of the bachelors' degree was 31%, masters' degree 42%, and doctors' degree 27%.
8. In the houses of approximately 90% of the students there were book collections other than the students' textbooks.
9. Fifteen per cent of the mothers and fathers read a book every month or more frequently, and about 20% read a book every 2 or 3 months.
10. About 40% of the mothers and fathers rarely ever read a book.
11. Approximately 45% of the mothers and fathers read a magazine frequently and regularly, while 33% read a magazine occasionally but not regularly.
12. More than half (59%) of the mothers and fathers spent a great deal of time each day reading the newspaper. While about one-fourth of them (26%) read the newspaper every day but did not spend too much time with it.

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[1] Division of Occupational Analysis, United States Employment Service, Dictionary of Occupational Titles, Vol. I, Definition of Titles, 2nd Edition, Washington, D.C., U.S. Government Printing Office, 1949.

13. Mothers read books, magazines, and newspapers more than fathers.

14. Forty per cent of the parents owned their home, 33% were buying, and 27% were renting. All, however, had one or more radios and television sets.

15. Well over half of the students had visited art exhibits (69%), forums and public discussions (67%), natural sites (63%), outstanding buildings (72%), public libraries (92%), parks (88%), theater concerts (65%), live plays (81%), movies (94%), YMCA or YWCA (80%) and zoo (76%) in their home towns.

16. Less than half had visited art museums (44%), historical and/or natural museums (44%), and opera (34%).

II. THE CURRICULUM

The principal objective of the summer school was to effect substantial improvement in the abilities of the students in reading, English composition, and basic mathematics and in the attitudes of the students toward reading and studying. Guided by this objective, the members of the instructional staff planned cooperatively the content, sequence, organization, and schedule of learning experiences. Each year preliminary planning by each group of teachers who were responsible for instruction in one of the three areas resulted in a prospectus for instruction based on the anticipated needs of students. The continuous systematic diagnosis, evaluation, and planning on the part of these groups during the course of the summer session provided the means by which the instructional program in each area was fitted to the actual needs of the students. In addition to the work done by the groups in each area, once instruction was underway, planning required that each teacher prepare a Daily Teacher's Record for each class he taught. The record specified the objectives of the class period, the plan for achieving these objectives, and an account of what took place in the classroom in terms of teacher-pupil activity. Further, the total staff devoted weekly meetings to continuous program-evaluation and planning.

While some changes occurred from summer to summer in the specific experiences provided in the three areas of instruction and some minor changes were made in teaching approaches, fundamentally the curriculum remained the same in terms of its philosophical basis, objectives, content, organization, and major approaches and methods. In the sections that immediately follow the beliefs upon which the curriculum was based, the general and/or specific objectives which were sought, the major approaches and methods employed to reach them, and the content of the instructional program are described from the point of view of the programs in the areas of reading, English, and mathematics.

The Reading Program

Excerpts from reports by the reading teachers on the reading program are presented below. These reflect their philosophy of instruction, state the objectives they sought to obtain, and describe the instructional approaches, and facilities and equipment they used.

Philosophy of Instruction

1. The reading process is conceived as a series of intellectual activities beginning with simple recognition of symbols and ending with the selection and use of skills appropriate to the ends or values sought by the reader. Learning to read is viewed as a continuous and complex process which requires careful planning and guidance throughout school, college and adult years. This concept of reading implies further that the reading facet of language is developed best through a gradual sequence of activities which takes into consideration the learner's present level of general achievement, his performances in other areas of communication, his capacity, his background of experiences and his desire to make use of reading in meeting many of the demands of his society.

2. This kind of orientation places responsibilities upon

students and teachers. Unless the student accepts reading as a dynamic aid in his personal and social development, he can never realize the full benefits of its effective use in securing information, developing appreciation and modifying attitudes. Unless all teachers accept the comprehensiveness and seriousness of the task of developing competent readers, they will overlook their obligations to help students develop (1) understandings, attitudes and skills needed in interpreting written and printed materials, (2) adjustments in reading needed to achieve desired purposes, and (3) information and techniques essential in locating, selecting and using materials from various sources.

3. These concepts of the process and attending responsibilities of students and teachers lead naturally to their relationship to the total college program... In summary of this aspect of the philosophy, the teachers believe that a reading program should have clearly defined goals for desired reading achievement among all students through the general communications program and in all subject areas which require specialized types of reading; that appropriate reading services should be provided for students who show promise of eliminating their deficiencies and doing work representative of a good liberal arts college; and that the total program be so articulated that it is comprehensive, cooperative and continuous in growth.

4. Without effective means of evaluating such a program, there can be understandable doubt regarding its usefulness and feasibility. It is agreed that the effectiveness of evaluation is in direct relationship to (1) the clarity of educational values and objectives,

(2) the wisdom in the use of education tests, (3) accurate descriptions of the students, and (4) valid assessment of conditions under which learning takes place.[1]

Objectives

The general objectives were as follows:

1. To acquaint the student with his present reading status and the nature of the reading process.
2. To correct and develop fundamental reading habits, skills and abilities.
3. To provide such specific emphases on these skills as the individual case demands.
4. To encourage systematic and conscientious efforts to correct reading deficiencies.
5. To relate reading instruction to current units of work in English.
6. To stimulate and direct wide reading.
7. To aid the student in increasing his independence in pursuit and appraisal of his work.
8. To help students develop specific skills necessary for efficient reading in various content fields.
9. To encourage students to appreciate, understand and practice the art of studying.

The specific objectives were as follows:

1. Understanding of reasons for the results of (1) the different reading tests, (2) check on visual efficiency, (3) taking of personal inventories and the like.
2. Knowledge of "how we read" and of certain factors which may impede or accelerate the process.

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[1] Helen M. Robinson (Editor) Evaluation of Reading, Chapter I, "What Is Evaluation," Ralph W. Tyler, Supplementary Monographs No.88, (Chicago, Ill: University of Chicago Press, 1958), pp. 4-9.

3. Increased ability in:
    - a. Finding main ideas
    - b. Identifying key words and concepts
    - c. Relating details
    - d. Reading to organize
    - e. Locating information
    - f. Differentiating rates of reading
    - g. Reading critically
    - h. Reading orally

4. Extension of general and specialized vocabularies in context and in isolation.

5. Improvement in the quantity, quality and general interest in voluntary reading.

6. Development of proficiency in reading in subject matter fields.

7. Improvement and refinement of study habits and techniques.

Approach to Instruction

For the groups assigned to the Cooperative Experimental Summer School reading classes, the teachers considered the best plan as one that is both a developmental and corrective, rather than remedial or intensively clinical, type. This conclusion grew out of analyses of standardized test results, study of individual inventories and systematic observation during conference and class periods. At least two-thirds of the students reflected the absence of systematic training in reading beyond the junior high school level and gave evidence of having been in schools where reading materials were appallingly limited. This kind of limitation demanded the more developmental or continuous approach, with specific plans for building the process substantially and systematically.

Through more intense diagnosis it was revealed that many students had difficulties which required concentrated focus on removing the deficiencies so that they would not block continuous growth in reading. These problems required the more corrective approaches which were given some consideration during regular class hours, but were attacked with more preciseness during clinic periods. Throughout these efforts individualization of instruction was seen as dependent upon understanding the peculiar needs and problems of each student.

Whether the setting is in classroom or clinic, varied and carefully chosen materials were considered imperative in these situations. It was understood that these materials (1) must be appealing to the students; (2) should provide for systematic development of all reading skills and abilities; (3) should lend themselves to the varied and complex demands of individualization of instruction; and (4) a sizeable supply of them should be geared to making reading an integral part of the lives of students. Mechanical devices for training in reading rate were regarded as useful when they were considered as one means of increasing speed of comprehension among individuals who could profit from such training.

In brief, instructional procedures were employed which utilized the best features of a skill-centered program, an individualized-approach based primarily on intensive diagnostic procedures, and a personality-centered program.

This more eclectic position is based on the belief that the mature reader reads extensively and avidly because it meets a need in his life, and he is not deterred by the fact that he lacks the skill to fulfill it.

Facilities and Equipment Used in Instruction

In the five rooms located in the Atlanta University Reading Center and the one, on Clark College Campus, the chairs and tables are easily shifted to accommodate needs ranging from a formal discussion session to informal conversations involving spirited exchanges of ideas growing out of assigned and personal reading. Around the walls of these rooms are open shelves holding and displaying work-type materials, books, and brochures to encourage wider voluntary reading, and training instruments for students requiring a more disciplined attack on the rate problem. The setting in each classroom unit was designed to reflect the seriousness and meaningfulness of the rare privilege which these students have.

In addition to the materials and equipment supplied by the respective colleges and the University Reading Center, there were the Trevor Arnett Library and the Morehouse Reading Room which were used by the students for voluntary reading activities and instructional purposes. Listings of instruments and materials were available for instructional and diagnostic purposes and are compiled in Appendix B.

Content of Instruction

The outline of the course in reading that was given during the summer of 1960 is presented in Appendix C. This outline is typical of the content of the reading course offered during each of the three summers.

General Description of Basic Procedures Used in Classroom and Clinic

In efforts to realize the objectives of the program the reading teachers were faced, on the one hand, with the task of providing the students with opportunities for developing certain understandings and skills which they consider essential, and, on the other, with the desire to remain continuously alert to the peculiarities and demands of the population just described. This section attempts to vitalize the more formal outline of activities found in Appendix C, through descriptions of three general types of procedures.

Procedures followed in introduction and development of basic skills.--The teachers were generally agreed that, as far as possible, they wished each student to understand the meanings of the major skills and to appreciate types of reading that would provide practice in their use. At this point they found certain lecture-discussion procedures, with interspersed illustrative exercises, to be most effective and economical. Following these introductory periods the approach became highly flexible, with (1) some students responding more meaningfully to routine exercises designed to stabilize the skills; (2) others, challenging current writings which seemed to violate all that they had learned about patterns of writing and finding eventually that the subtlety of the writer concealed a simple technique; and (3) still others tackling longer selections which often dramatized their need for the skills under consideration.

Perhaps the most gratifying moments were when, in informal classroom or clinic sessions, different students were heard to say, "My whole trouble was missing the main idea"; "You let that paragraph pattern throw you!"; or "Looking up those key words paid off during the last clinic hour."

Inherent in all that was done with skills was the prevailing hope that the discipline of dealing with these basic tools of reading comprehension would be so timed that it would not rob reading of a place in the pleasurable pursuits of the students, but strengthen it for the demands which it can and must meet in a society such as ours.

Procedures followed in developing the more specialized abilities. --One of the demands of reading which is age-old as well as current in emphasis, involves the more perceptive and critical reactions to the printed page. In the outline we have called them "critical reading," "predicting outcomes," and the like. Actually, there are some authoritative positions which assume this emphasis to be more the task of subject areas rather than reading classes and clinics. We have held the belief that there is no either-or position, but a real challenge to all teachers who believe that reading and thinking are inseparable.

Here, the procedures have tended to be greatly influenced by the personalities of the teachers. One teacher finds himself particularly adept in raising questions, the answers to which reveal students' tendencies to generalize too quickly, to react without sufficient information, or to misjudge the semantics of the situations. Another teacher may find security in beginning with a generally appealing article and illustrating propagandistic techniques which breed prejudices and biases. Still another may find a filmstrip or movie which of itself is controversial, and through its content may motivate a high level of reasoning with several writers who have addressed themselves to the same themes or ideas, as the audio - or visual media. Even before the time designated for consideration of critical and other more specialized abilities, the students were exploring this area.

Procedures followed in encouraging and guiding voluntary reading.--One area which provided even more exploration than the specialized abilities was voluntary reading. The student inventories revealed that the general level of reading interests and tastes was low. The teachers realized, also, that reading is at once a habit of communication and a dynamic resource for living, which, under optimum conditions is built into the life of a child and cultivated through the needs and aspirations of the youth and the man.

For many students, then, the task was seen as one of bringing a gap and of creating a genuine need for reading. The teachers have taken many approaches to this problem. A general one was to follow the idea found in "My Reading Design," a device for identifying general reading areas and providing the reader with a plan for strengthening reading through his voluntary efforts. In the section which follows, some description will be given of the effectiveness of this technique.

Another means was through displays and presentations within the room; book jackets made real through occasional comments; bookshelves made attractive with travel brochures, and currently popular personalities, in attractive poses on album covers or newspapers and magazine clippings; and trouble spots in our world today made vivid through discussions and illustrations by faculty members who had viewed the actual situations.

A final procedure was that of actual discussion of books. The results of voluntary reading could be shared during some class periods, in informal smaller groups and in individual conference periods. In either setting teachers have reported high levels of enthusiasm and increasing ability to complete books without being discouraged by the laboriousness of the process.

Descriptions of Significant Experiences in Classroom and Clinic

Significant experiences in the development of specific skills in the development of the more specialized abilities and in voluntary reading are described below.

Description of significant experiences in the development of specific skills.--Some of the best examples of articulation of classroom and clinic sessions may be found in the work with specific reading skills. In the classroom each major skill was discussed in terms of its meaning, its functions, and its importance in different patterns of writing. In the clinic sessions students had opportunities to practice and exercise these skills through materials appropriate to their needs.

One young woman, whom we shall call Case A, provided a good example of articulation of classroom and clinic experiences in an effort to help the student find main ideas and increase her vocabulary. In preliminary conferences held during the second week the student was apprised of her gross discrepancies between paragraph comprehension and other aspects of silent and oral reading test results; in all instances she tended to score quite high in locational skills, speed of reading and accuracy in oral reading, but very often the main points of the selections were not correctly identified. Although her average grade equivalents on the standardized tests were not below 12.0, she realized that the comprehension factor was always below this median. From class discussions and preliminary exercises she began to sense her frequent preoccupation with points other than the main one and her failure to understand many concepts basic to correct interpretation of what was read.

When Case A came to her first clinic session she was ready for the planning conference which ensued. She understood that the suggestion that she do some exercises from the practice book, Reading for Meaning, could meet her need for finding main ideas in shorter selections. She accepted the job of working through exercises in the Reading Laboratory, for the challenge of the varied sections, and the possibilities for integrating the skills of comprehension appealed to her desire to become an "adult reader" in every sense of the word. She grew to appreciate longer selections in books, such as An Approach to College Reading and The Art of Efficient Reading, in that they became a kind of major hurdle following intensive practice on the more skills-centered selections; moreover, they became a kind of testing-ground for what she had accomplished in efforts to strengthen the separate skills of comprehension. It should be stated, also, that at times she got very real pleasure in reading from the S.R.A. career booklets which, with their more narrative and persuasive content, afforded her little or no difficulties in comprehension, but enlightened and inspired her as she moved along at an independent level of performance.

The understandings and insights just described did not occur in one classroom or clinic session, but developed gradually and even, at times, laboriously. At first Case A became discouraged by the inconsistency of her performances. In materials which gave scores and grades she ranged from grade 9 to 12, and on longer exercises she often missed the central theme completely. Yet, with systematic emphasis upon the place and function of these skills, the teacher was successful in helping her to think with the writers and to sense how and what they were trying to communicate.

These efforts to arrive at understandings required general discussions, frequent conference, supplementary materials prepared by the teacher, and careful pacing and timing of the instructional activities so that Case A never became completely satisfied with her accomplishments nor utterly frustrated by her failures.

At the end of the period she had made significant gains in attitude toward the skills of comprehension, in execution of the skills on informal and formal tests, and in differentiation of skills needed in reading different types of materials.

It was noted, finally, that in general vocabulary Case A seemed to have made appreciable progress. In the subjective judgment of this teacher, her growth in concepts and specific words supported the prevailing belief that voluntary development is more effectively fostered in situations where the need for the term is urgent and the context telling and meaningful to the reader. In class discussions it was obvious that Case A was trying to incorporate many of the more meaningful concepts into her contributions, and in work with units she was deriving more meanings from context and using the dictionary more discriminatingly than at the beginning of the experimental period.

The teacher was gratified with the progress of Case A and with many more students similar to her in attitude and relative achievement.

Description of significant experiences in the development of the more specialized abilities.--The teachers of reading see the need for providing a program for the personal enrichment of the student in order to broaden his background, deepen his understanding, sharpen his concepts, and cultivate discrimination. Such enrichment is a vital part of his academic growth and serves as a valuable aid in preparing him for the social demands of today's world. It is initiated in many ways and by varied methods often growing out of student-led discussions, student suggestions, student interests and felt needs. It is not separate from but concomitant to the skill-program and requires supplementary materials containing current and timely articles from magazines, newspapers, periodicals and a wide variety of books. These materials provide broad and deep experiences which make possible many types of unit projects. The units, in turn, offer excellent opportunity for oral and written expression. They also create initiative, are self-motivating, can be used as a basis for critical analysis, and more important, through student discussions they encourage rapport so necessary for student growth in learning situations within an academic climate.

One example of the extended program during the summer was a unit on the newspaper at which time each student in the program was supplied with three different types of newspapers; namely: the Sunday New York Times, The Atlanta Constitution, and The Atlanta Daily World. Upon day of issue, the students

1. Compared, classified and evaluated the three papers
2. Discussed the format of each
3. Noted in each the allotment of space devoted to national, international and local news
4. Analyzed the various sections of the papers
5. Distinguished between factual reporting and editoral opinion
6. Noted organization of journalistic writing with special attention to paragraph structure
7. Interpreted the news
8. Interpreted cartoons
9. Made a study of the book review section

Many of the skills were correlated in the above procedures. These, in part, were skimming, careful reading, grasping the main idea, noting important details, use of the index, vocabulary extension, organization of materials, identifying propaganda, comparison of opinion, and critical analysis. Moreover, there was evidence throughout all classes of intense interest in current affairs and world problems.

Of the many articles currently in the news and receiving front page attention in all three newspapers were two events which seemed to stimulate more discussion among the students than did any other. These were the up-risings and riots in the Belgian Congo, the newest of the independent countries of Africa, and the Democratic National

Convention. One class agreed to take the problems of the Belgian Congo as a project. This grew out of the many questions asked by the students seeking additional information about the country, the causes of disturbances, and the importance of the Congo in world affairs. Each member of the class selected some phase of the project following his specific interest, searched for information in many magazines, newspapers and books relating to the problem, and finally wrote a theme requiring simple documentation. Most of the papers were neatly typed, complete with outline, introduction, footnotes and bibliography. One student drew maps of the Belgian Congo and the Union of South Africa locating the cities where riots had occurred, and discussed the differences as well as the similarities of outbursts within the two countries. In general, the analyses of the crises, the criticisms and conclusions were mature and showed thought and deep insight into the problem.

At the termination of the project, several papers were read to the class in order that the writers might share with others their findings. Most of these papers were tape recorded. Expressions came from the groups of an enjoyable and stimulating experience. Certainly the students realized, more than ever before, the tremendous impact of the independent countries of Africa upon world affairs.

A second significant learning experience in the area of critical newspaper reading was that of focusing attention upon the Democratic National Convention. The students read and discussed various articles concerning the candidates for the Democratic presidential nomination. They considered the qualifications and viewpoints of the possible candidates as given in the New York Times and The Atlanta Constitution. These were then compared with similar information received from other sources; namely, the Reader's Digest, radio and television news commentaries. As a result of these enthusiastic class sessions, the students set aside special time within their busy schedules in order to follow the Democratic National Convention on television.

A third example of the enriched program was a trip taken by a class to the Trevor Arnett Library. This occurred near the beginning of the summer session. Many students, including those who live within the city limits of Atlanta, had not had the experience of visiting a University library. They were shown the divisions of the library, the main reading room, the periodical room, the reference room, and how to use the card catalog. The mural in the main lobby of the building was briefly explained, and students were allowed to examine the various exhibits and the art gallery. It was interesting to note the expressions of delight on many faces, and most gratifying to see the interest shown in these focal points of interest. Upon returning to the classroom, the students were shown a film on how to use the facilities of the library and were given a follow-up lesson in library skills.

Still another illustration of the enriched program was projected by one class with the bulletin board as the core of interest. Appearing on the board were pictures of ten persons of national and international importance in world affairs. Each member of the class was asked to write the names of as many persons as he could identify.

Although several pictures were puzzling to all of the class, some students could identify as many as eight out of the ten and could give a brief statement of the person's contribution to the world. Once all pictures were identified, the students read biographical sketches of the persons, noting facts previously unknown. Spirited discussions concerning others in the news followed this venture with definite evidence that interest had been stimulated in current events.

Description of significant experiences in voluntary reading.--Realizing the limited reading experiences and the scarcity of reading materials accessible to these students in their homes and in other facilities the reading teachers made special efforts to provide a variety of materials and to create an atmosphere which might prove as a source of inspiration for reading beyond the required expectations of the teacher.

During the initial stage of the program special emphasis was given to identifying the major areas in which voluntary reading should be done, stressing the value of a balanced reading diet. In order to aid the students to effect a balanced diet, the teachers asked each individual to keep a record of his reading using "My Reading Design," Form D, and to write reviews or summaries of the books read. The materials available for voluntary reading were found in the Trevor Arnett Library and the Morehouse Reading Room. Students were encouraged to read intensively and extensively, to read for recreational purposes, using the major areas identified.

In order to further challenge the students in this area the teachers found that the attractive physical setting of the room, using the various displays described previously, was most successful in creating interest in voluntary reading. The teachers observed that many students were not satisfied until they touched and examined these materials. Through classroom discussions teachers gave information which they felt would stimulate students to search for and read materials which would give deeper insight into the area in which they were interested. The teachers felt that the students were curious and that this opened the door to new horizons for learning.

The fruits of this approach were evident in the type of activities in which the students engaged. Many of the students were interested in traveling abroad and wanted to find further information about various cities. One city which seemed to fascinate most students was Venice, Italy. These students read materials which answered their questions as to the city's development on water. Others were challenged to read materials which gave insight into the lives of opera stars and background information relating to the development of the opera. Still others were interested in reading biographical data concerning famous Negroes, great scientists and great heroes of war, past and present. A few students concerned themselves with the world situation in relation to Communism. Most students engaged in reading current materials on the racial situation. One student who desires to become a lawyer in order to aid the fight for integration conveyed to his teacher that this was the only material in which he was interested. When the teacher investigated his background and found it limited in reading materials but indicative of a desire to read she was of the opinion that the student had made a start and that she would attempt to help him grow in extent and quality of reading. Another significant development was the case of a young lady, who, in conference with her teacher, confessed that she did not like to read. As the conference progressed it was discovered that the student was interested in home economics. A trip to the library yielded a book on this subject. The student was urged to read the book at her leisure. The morning following the receipt of the book the teacher found that she completed the book and was anxious to read another. Before the summer session ended six books, along with written reports, had been completed by this student.

The teachers were interested in having this present attitude continued. In order to help preserve this attitude the students were given written suggestions and book lists for the continuance of voluntary reading.

The English Program

In the sections below excerpts from materials prepared by the teachers of English describe the philosophy of instruction, general and specific objectives, and instructional approaches for the English program.

Philosophy of Instruction

To us of the Department of English, the students we teach are of primary importance. For this reason, we endeavor to adjust our course offering, our methods of instruction, our conference and clinic sessions to the capacities, interests, and needs of our students. Beginning where these students are, we seek to stretch and challenge their minds, to develop in them a genuine respect for optimum performance, not only in English but in the other disciplines of the liberal arts tradition. Believing that students must learn and teachers must teach, we do not deliberately spoon feed. Always seeking ways to place the responsibility of learning upon the students, we constantly employ some of the basic laws of learning: drill, repetition, correlation, and humanizing subject matter.

Objectives

The instructional program of the Department was based on certain assumptions that were subsequently confirmed, namely:

1. That a large majority of the students involved are conspicuously deficient in grammar and mechanics;
2. That a similar majority of these students need careful guidance and discipline in logically organizing thought, in constructing good sentences, and in composing unified, coherent paragraphs--and longer themes;
3. That these students need to learn how to gather ideas from their reading and how to use these ideas as springboards for subject matter;
4. That many of these students are deficient in verbal fluency.

Geared to these assumptions were the general objectives of the course:

1. To teach acceptable English as determined by standard writers and speakers in the cultivated level of contemporary society -- to

stress the communicative importance attached to acceptable English and to create such attitudes that the student will endeavor to grow in the desired skills and to make them habitual.

2. To lead students to read with appreciation and with analytical comprehension as invaluable aids in effective writing and speaking.
3. To help students to become aware of the relationship between thought and mechanics.
4. To develop in the student a respect for and an appreciation of the truly excellent.

More specifically, the Department aimed

1. To fill the gaps in basic areas of grammatical usage and mechanics.
2. To develop the ability to compose -- "to find workable, interesting subjects, to give them substance and form, to communicate them correctly, fluently, and effectively to the reader."

Approach to Instructions

Instruction in two distinct, yet integrated areas, writing and reading was coordinated through experiences in classroom and clinic. An average of two themes each week was required of students -- one done in class under laboratory conditions, the other was composed out of class. Using the clinical approach, teachers worked closely with the individual linguistic and learning problems of each student.

Further, the instruction in English and reading was reinforced through cooperative planning and teaching on the part of the English teachers and the reading teachers. Coordination of the efforts of these teachers was facilitated by the teaching assistants who served as liaisons between them.

Content of Instruction

An outline of the English course taught during the summer of 1960 appears in Appendix D. This outline provides a typical example of the content of the English Course during each of the three summers.

The Mathematics Program

Excerpts from reports prepared by the mathematics teachers are presented below to provide a statement of the philosophy of instruction in mathematics, a statement of the objectives of the program, and a description of the instructional approaches employed in teaching mathematics.

Philosophy of Instruction

The mathematics teachers believe that learning takes place when the student's environment is so structured that the student discovers facts, relationships, and principles for himself. The student then becomes an active participant in the learning process rather than a passive recipient of labeled packages of information. The department also believes that emphasis upon principles and relationships are of more importance than mere mechanical manipulations--machines can do that. While we insist upon accuracy in the manipulative skills, we believe that these skills without meaning lose their significance.

Objectives

1. Cultivation of an understanding of the fundamental concepts and processes of mathematics.

2. Development of the power to think logically, to analyze a given situation critically, to determine relative values, and to reach valid conclusions.

3. Development of an appreciation of mathematics for its precision, beauty, power, systematic organization, clarity of symbolic language, exact logical reasoning, and its great capacity for yielding generalizations and predictions.

Approach to Instruction

Standardized tests and conferences were used to assess the ability in mathematics so that students could be grouped homogeneously for instruction. While the general objectives were the same for all groups, methods of instruction varied with the abilities of the students in the group. The following methods of instruction were used in various combinations: lectures, discussions with student participation, supervised study, individual assignments, conferences and clinics, tests, and remedial teaching.

Materials included basic textbooks and supplementary textbooks when needed. Compasses, rulers, slide rules, protractors, and meter sticks were available in sufficient quantity for individual study. Audio-visual equipment facilitated instruction.

Content of Instruction

An outline of the mathematics courses taught during the summer of 1960 is presented in Appendix E. This outline is typical of the content of these courses during each of three summers.

Basic Organization

The eight week summer session was organized into a five day per week program of instruction in the content areas with classes scheduled from 7:30 a.m. to 12:00 noon and conference and clinic periods scheduled from 1:30 p.m. to 3:30 p.m. The period from 3:30 p.m. to 5:30 p.m. was given to a supervised program of recreational activities and the period from 7:00 p.m. to 10:00 p.m. in 1959 and 7:00 p.m. to 9:00 p.m. in 1960 and 1961 was designated as a study period. Required supervised study was held in classrooms three nights per week with the instructional staff during the summer of 1959. During the summers of 1960 and 1961, students were required to engage in supervised study in his or her dormitory. These sessions were under the direction of the dormitory supervisor.

Saturday mornings, during the summer of 1959, were reserved for programs designed to supplement the academic phase of the curriculum. These programs which evolved out of the on-going concerns of the faculty and the students, are listed in Appendix F. During the summers of 1960 and 1961, Saturdays were available for supplementary instruction and clinical work in all areas. Upon faculty request, special help groups working to master grammatical skills and basic mathematical skills and reading were scheduled to meet during this period.

Each summer the staff included the director of the summer school, six reading teachers, three mathematics teachers, three or more English teachers (3 in 1959 and 4 in 1960 and 1961), three teaching assistants (each year a new group of English teachers from local high schools), two or more supervisors of recreation (3 in 1959 and 1960, and 2 in 1961) and two specialists in testing and research.

Classes in reading, English and basic mathematics met daily, Monday through Friday. Daily schedules for 1959 and for 1960 and 1961 are shown in Appendix G. Classes in each of the three areas comprised six sections of from 12 to 17 students grouped homogeneously. Reading and English sections were grouped on the basis of reading test scores; mathematics sections were grouped on the basis of mathematics test scores and the results of interviews.

The bulk of the instructional time was given to instruction in reading. Each student spent a total of 140 minutes daily in reading during 1959 (80 minutes for classroom instruction and 60 minutes for clinical sessions) and a total of 100 minutes in reading during 1960 and 1961 (50 minutes each in classroom instruction and in clinical sessions).

The time given to each student for work in English was 50 minutes per day for classroom instruction plus 2 hours per week for clinical sessions in 1959 and 50 minutes per day for classroom instruction and one hour per day for conference and clinic in 1960 and 1961.

The time devoted to work in mathematics was 50 minutes per day for classroom instruction in 1959 and 50 minutes per day for classroom instruction and 50 minutes per day for conference and clinic in 1960 and 1961.

The following statements delineate the more general features of the instructional program, many of which are reflected or described in the discussion given in the foregoing sections.

1. The instructional program--objectives, content, organization, etc.--was planned cooperatively by the teachers who were to teach it.
2. Planning was based on diagnoses of students' needs.
3. Students were made aware of their deficiencies; they were encouraged to accept responsibility for removing them and they were kept informed about their rate of progress.
4. Daily systematic planning was required of each teacher for each class.
5. Classes comprised 15 to 17 students grouped homogeneously with respect to abilities in the subject in which they were receiving instruction.
6. The learning situation provided an ample supply of a variety of teaching materials and a physical setting that supported instructional procedures.
7. Instructional method emphasized teaching the individual student in both classroom and clinic.
8. Teaching focussed on both the improvement of skills and the development of meaning.
9. Large blocks of time were devoted to instruction, especially in reading.
10. Instruction in the areas of English and reading involved cooperative planning and team teaching.
11. Clinical sessions in reading, English and mathematics were a part of the daily schedule.
12. Teachers scheduled special individual conferences and special clinical sessions for individuals and groups when they felt this was necessary.
13. Teachers were available and accessible for help when students requested it.
14. Teaching assistants aided the instructional program.

15. The daily schedule called for continuous attention to the academic program and its supporting activities.

16. Definite periods, arrangements, and expectations were established for study and voluntary reading on the part of students.

17. A planned recreational program, the cultural program of the Atlanta University Center, and the opportunity to participate in various activities were provided for students.

18. Individual records were kept on student's performances and teacher's evaluations of them. Evaluations on each student's performances were sent to the college in which he was enrolled.

19. The staff was involved in continuous evaluation of the instructional program in light of its objectives.

III. METHOD OF DETERMINING RESULTS

Because the major goal of the project was to improve academic achievement and foster favorable attitudes toward study, procedures were systematically directed toward assessing the effectiveness of the summer programs in producing these and related results. In addition, at the beginning of the second year, efforts were introduced which aimed to discover student characteristics associated with improved academic performance.

The specific questions for which answers were sought and the various procedures employed in gathering data are presented in the sections which follow.

Questions for Which Answers Were Sought

The focus of efforts to determine the results of the summer program was on the following questions:

1. Do the students improve in academic performance?
    a. Do they make substantial improvement in reading, written expression, mathematics, and study methods by the end of the summer period of instruction?
    b. Do they make greater gains in reading, written expression, mathematics, and study methods by the end of their first year in college than do fellow freshmen who were not enrolled in a summer program?
    c. Do they achieve higher semester grades during their first year in college than do fellow freshmen who were not enrolled in a summer program?
2. How do the students view the summer program and their participation in it?
    a. What are their ideas and feelings about specific aspects of the experience?

b. How do they evaluate common aspects of their high school and summer school experiences?

c. How do they evaluate common aspects of their summer school and freshman year experiences?

3. How do the students differ from fellow freshmen who were not enrolled in a summer program in terms of the extent to which they participate in extra-class activities during their freshman year in college?

a. Do more of them participate in student organizations?

b. Do they hold more offices and memberships in student organizations?

c. Are they more involved in rendering special services to the college?

d. Do they spend more or less time in part time work?

4. Are the students more likely to remain in the colleges?

a. Do more of them complete a year or more?

b. Do more of them graduate at the end of four years?

5. How do certain differences in the characteristics of the students relate to their level of achievement?

a. Do the students who come from home backgrounds of higher quality make higher scores on initial tests than do students from home backgrounds of lower quality?

b. Do the students who make the lowest scores on initial tests improve more in the abilities and skills measured by these tests than do the students who make the highest scores on these tests?

c. How do differences in quality of home backgrounds of the students relate to level of achievement as shown by semester grade-point averages obtained during their freshman year?

Procedures

In order to provide answers to the foregoing questions it was necessary to obtain several kinds of data on the summer students:

standardized test data, semester grades and grade-point average, personal reactions, extra-class participation records, home background data, and data on enrollment and retention. Further, it was necessary to establish a control group and collect much of the same data on these students. A procedure tended to follow the same basic pattern over successive years; hence, except where variations are noted, the procedures described below were employed during each of the three years of the project.

Establishing the Control Group

Since plans for the first summer program were begun late in the preceding school year, procedures for selecting summer students were well underway before plans were developed for establishing a control group. For this reason, it was not possible to select both the summer students and the control group on the basis of the same criteria applied at the same time to a population of high school seniors who were prospective enrollees in the freshman classes of the four colleges. Thus, the students who comprised the control group in the first year of the project were selected on the basis of data gathered after they had enrolled in college. The procedure was as follows:

1. The Hemnon-Nelson Tests of Mental Ability for Grades 9 through 12, Form A, had been administered to the summer students at the beginning of the 1959 summer program. Shortly after the beginning of the first semester of the 1959-1960 school term, this test was administered to a large sample of entering freshmen at each of the four colleges, excluding all freshmen who had

participated in an academic program the previous summer. The control group was selected from this sample of entering freshmen. That is, students were drawn from this group to form matched pairs with summer students so that each pair comprised individuals of the same sex who were enrolled in the same college and who were as nearly alike in Hemnon-Nelson I.Q. as the data permitted.

2. The results of this matching, which yielded 77 pairs, are shown in Table 2. Here it is revealed that while the mean difference in I.Q. of the pairs is only 1.63 points in favor of the summer students, now called the participants, this difference is too large to say that the members of each pair have the same I.Q. or to use this group when making statistical tests that assume the pairs are matched. However, the overall ability level of the two groups was considered sufficiently alike to permit comparisons in terms of some of the descriptive data obtained.

Table 2

The Matching of Participants and Nonparticipants, 1959-60, in Terms of Scores on the Hemnon-Nelson Tests of Mental Ability

(N = 77)

Statistic	Participants	Nonparticipants	Differences
Range	81 - 118	80 - 121	-9 - +9
Mean	98.99	97.36	1.63
SD	8.91	9.09	4.19
SE_D			.48
t			3.39*

*Significant

3. The analysis of the standardized test results was based on the performance of 45 of the 77 pairs. Table 3 shows that for these 45 pairs the mean difference in I.Q. of .62 points is not statistically significant.

Table 3

The Matching of Participants and Nonparticipants, 1959-60, in Terms of Scores on the Hemnon-Nelson Tests of Mental Ability

(N = 45)

Statistic	Participants	Nonparticipants	Differences
Range	81 - 118	80 - 121	- 4 - +4
Mean	99.53	98.91	.62
SD	9.51	10.62	2.55
SE_D			.38
t			1.63*

*Not significant

For the second and third years, the control group, like the summer students, was selected from among a large group of students who, during the first half of their senior year in high school, had taken the tests administered through the Cooperative Intercollegiate Testing Program. This testing program, which has been described in an earlier chapter, provides scores on two tests -- The Cooperative Reading Comprehension Tests and the Cooperative School and College Ability Test (SCAT) -- for a fairly large proportion of the freshmen who enroll in the four colleges. To form the control groups, each summer student entering one of the colleges in September of 1960 and 1961 was matched in terms of his scores on the two tests with an entering freshman at his college who was of the same sex and who had not attended a school during the summer intervening his high school graduation and college matriculation.

The results of the matching in September of 1960 are reported in Table 4 and 5 which show that the mean differences between scores of the students who participated in the summer school and the non-participants on each of the two tests are not significantly different.

Table 4

The Matching of Participants and Nonparticipants, 1960-61, in Terms of Scores on the Cooperative Reading Comprehension Test

(N = 84)

Statistic	Participants	Nonparticipants	Differences
Range	40 - 60	39 - 57	-4 - +5
Mean	47.02	47.21	-.19
SD	4.40	4.50	1.95
SE_D			.21
t			.9*

*Not significant

Table 5

The Matching of Participants and Nonparticipants, 1960-61, in Terms of Scores on the School and College Ability Tests

Statistic	Participants	Nonparticipants	Differences
Range	276 - 307	275 - 309	-8 - +9
Mean	288.71	288.25	.56
SD	6.63	7.41	3.41
SE_D			.37
t			1.49*

*Not significant

The results of the matching in September of 1961 appear in Tables 6 and 7. The mean difference between the scores of the pairs on the reading test is not statistically significant, while on the SCAT a significant difference is noted. This mean difference, though statistically significant, does not seem to suggest that the members of the pairs were grossly different in terms of the abilities measured, since the largest difference between members of any pair was 10 score points and for 80 per cent of the pairs, members differed by not more than 5 score points. Further, because of the close matching in terms of reading ability, the overall matching was deemed sufficiently close to say that the two groups were equally matched.

Table 6

The Matching of Participants and Nonparticipants, 1961-62, in Terms of Scores on the Cooperative Reading Comprehension Test

(N = 73)

Statistic	Participants	Nonparticipants	Differences
Range	139 - 157	135 - 156	-6 - +6
Mean	146.32	146.59	-.27
SD	3.25	3.72	2.40
$\underline{SE}_D$			.28
$\underline{t}$			.98*

*Not significant

Table 7

The Matching of Participants and Nonparticipants, 1961-62, in Terms of Scores on the School and College Ability Tests

(N = 73)

Statistic	Participants	Nonparticipants	Differences
Range	276 - 305	275 - 303	-6 - +10
Mean	288.20	286.33	1.87
SD	6.18	6.01	3.54
$\underline{SE}_D$			.414
$\underline{t}$			4.51*

*Significant

Gathering Standardized Test Data

Standardized tests were administered to provide evidence of change in abilities and skills in reading, written expression, mathematics, and study methods. While there were some variations from year to year in the tests selected for use, the basic procedure for administering tests was as follows:

1. Certain tests were administered to the summer students at the beginning of the summer period of instruction (June) and alternate forms of these tests were administered at the end of the summer period of instruction (the following August).
2. Other standardized tests were administered to summer students at the beginning of the summer period of instruction (June) and alternate forms of these tests were administered to the same students at the end of their freshman year in college (May of the following year).
3. The same forms of the tests that were administered to the summer students in June were administered at the beginning of the following school year (in late September or early October) to a control group of entering freshmen. Alternate forms of these tests -- the same tests that were administered to summer students at the end of their freshman year in college -- were administered to the control group at the end of their freshman year.

With this procedure it was possible to compare the scores of the summer students on the tests administered to them at the beginning and end of the summer period and thereby determine whether or not the score changes reflected gains in the abilities and skills measured.

Further, it was possible to compare the scores of the summer students on those tests administered to them at the beginning of the summer period and at the end of the following school year (their freshman year) with the scores of the control group or nonparticipants on these same tests administered to them at the beginning and end of their freshman year. This comparison provided evidence of whether or not the changes in scores of the summer students over the period from June to May reflected greater gains in the abilities and skills measured by the tests than the changes in scores of the non-participants over the period from September to May. When the comparative score changes revealed a significantly greater gain by the summer students it was then possible to attribute that gain to the effect of the summer program, since the major difference between the summer students and the students with whom they were matched was that the summer students had undergone a period of instruction during the summer prior to their freshman year in college, and the control group had not.

The specific plans followed each year in gathering standardized test data along with the names of the tests used are shown in Tables 29, 30, and 31 in Appendix H.

All standardized tests were machine scored except the STEP Essay Test which is not amenable to this method. Each essay was scored by two independent scorers according to the procedure outlined in the test manual.

Using Semester Grades and Grade-Point Averages

The following procedure was involved in making comparisons of the course grades earned during the regular sessions by students who participated in the summer programs and the students with whom they were matched:

1. Official records of mid-first, first, and second semester grades were obtained from the office of the Registrar at each college.

2. A common method of assigning quantitative values to letter grades was adopted in order to combine into a single distribution grade-point averages normally based on different systems. For each hour of course credit, the grades A, B, C, D, and F were assigned 4, 3, 2, 1 and 0 grade points, respectively. No grade points were counted for a course having no hours credit, even though a letter grade was reported for the course. No hours or grade points were counted for a course when grades other than A, B, C, D, or F were reported.

3. Three grade-point averages -- mid-first, first, and second semester -- were computed for each student in the participant and nonparticipant groups. A grade-point average was computed by dividing the total number of grade points by the total number of course hours.

4. Separate lists were compiled of the mid-first, first, and second semester in English and Mathematics course grades for the students in the participant and nonparticipant groups.

Studying Students' Reactions

Two instruments were constructed to elicit the reactions of summer students to the summer school experience. These were the Personal Reactions Inventory and the Sentence Completion Exercise. The construction of each involved careful initial preparation, critical study, preliminary tryout, and revision. On administering the instruments, the examiner requested that students give anonymous and frank responses.

The Inventory has two forms, each of which is composed of twenty multiple-choice items with five alternatives. One form, administered at the close of the summer session, was designed to reveal students' comparative evaluations of aspects of their summer school and high school experiences. The other form, administered to summer students at the end of their freshman year, was designed to reveal students' comparative evaluations of aspects of their summer school and college experiences. The content of both forms is identical, except for the change in reference. For example, the phrase, "my senior year in high school," which appears in several sentences of one form is altered to read "during this year in college" in the other form.

The questionnaire responses were analyzed according to the following procedure:

1. A tabulation was made of the number of times each of the five alternatives for each item was chosen.
2. For each item, the sum of the frequencies of the first two or upper-end alternatives was obtained. The combined frequencies of the two upper-end alternatives of an item became the (+) category for that item.
3. For each item, the sum of the frequencies of the last two or lower-end alternatives was obtained. The combined frequencies of the two lower-end alternatives of an item became the (-) category for that item.
4. The total number of frequencies for the third or middle alternative of an item became the frequency of the (0) category for that item.
5. Chi square was used to determine whether the distribution of frequencies in the (+), (0), and (-) categories for each item is any different from that which would have occurred if the expected frequencies of these categories were determined by chance. A chi square reaching the .05 level of confidence was considered significant.

A copy of the Personal Reactions Inventory appears in Appendix I.

The Sentence Completion Exercise contained twenty-five (twenty-three on revised form) incomplete sentences designed to reveal students' perceptions of specific aspects of the summer experience such as teachers, assignments, conferences with teachers, and classmates. The Exercise was administered at the close of each summer session. Responses to each item were recorded, categorized, and tabulated; the per cent of responses in each category was computed and an interpretive summary was prepared.

Gathering Data on Students' Extra Class Activities

A form carefully designed to obtain information about the extra class activities of summer students and students in the control groups or nonparticipants during their freshman year was administered to them during the testing period near the end of the freshman year. Responses to each item were tabulated, and percentages were computed.

A copy of the form, Record of Participation in Extra-Class Activities, is shown in Appendix J.

Obtaining Data on Enrollment and Retention

Information on enrollment and retention of summer students and the students of the control group was obtained directly from the registrar at each of the four colleges. The information obtained for each year's group was tabulated and summarized.

Collecting Data on Home Background

An 18-page questionnaire was constructed to facilitate gathering data on the home backgrounds of students.

The content of the questionnaire was designed to reveal information about five aspects of the student's home background: Social Contacts, Extra-curricula Interests and Activities, Social and Cultural Level of the Community, the Home, and Parental Attitude Toward Education. These factors have been considered among the most important environmental influences on the mental development of Negro youth of high school age.[1]

The questionnaire is composed of four parts, each of which is divided into sections and/or items. The organization of the content of the questionnaire was guided by functional rather than logical considerations; hence, the arrangement of sections and items does not follow the pattern suggested by the five factors nemed above.

While the form and content of most of the items in the questionnaire are original, several of the items were suggested by other instruments including U. S. census forms, personnel data sheets of colleges, and published questionnaires. Each item selected for the questionnaire was studied for clarity and appropriateness of content by two college student-personnel workers, a college teacher of English, and a psychologist; their suggestions were incorporated in the final draft of the items.

A tryout of the questionnaire with several college freshmen revealed that they encountered no difficulty in completing it.

The questionnaire was administered to students individually in a private setting according to the directions shown in Appendix K. The same worker administered the questionnaire to each of the summer students.

The questionnaire data were interpreted in terms of "A Scale for the Measurement of Social Environment of Negro Youth" developed by Herman Canady.[1] Originally the scale was employed to assess data gathered by the use of the interview.

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[1] These factors are the major dimensions of a scale for the measurement of the social environment of Negro youth developed by H. Canady, C. Buxton, and A. Gilliland (Journal of Negro Education, 11:4-13, 1942). Further, the importance of these factors was stressed by Benjamin Bloom, Horace M. Bond, Allison Davis, and O. W. Eagleson in the writer's conversations with them on the development of the questionnaire.

The items of the scale are rated on a 5-point scale, each step of which is described in the scoring key.... The items' scores range from 5 for the most desirable to 1 for the least desirable condition. The total possible scores range from 17 to 85. All questionnaires were scored by the same worker. Approximately 14 months after the first scoring, 30 questionnaires were re-scored. When the results of the first and second scorings were compared, Rho was found to be .88, which suggested that the scoring was sufficiently reliable for the purposes of group analysis.

A further analysis of the data involved a tabulation and summary of responses to selected items.

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[1] H. Canady and others, "A Scale for the Measurement of the Social Environment of Negro Youth," The Journal of Negro Education, 11:4-13, 1942.

IV. RESULTS

Although the project involved three distinct summer programs, each sought the attainment of the same general objective; correspondingly, each was assessed in terms of the same major questions. Therefore, in the sections that follow, results are organized primarily with respect to these major questions, and secondarily with respect to each summer program. That is, in each section, the findings relevant to a major question are presented for each of the years of the project.

Outcomes in Terms of Academic Performance

It was hypothesized that if the summer programs are effective, then the students who participate in them should evidence improved academic performance. To determine how successful the programs were in producing this result, each was assessed at two points: at the end of the summer session and at the end of the regular nine-months session, September through May, following the summer session.

At the end of a summer session, outcomes were assessed by comparing the performances of the students on the initial and final tests administered at the beginning and end of the session. These included alternate forms of reading, English, and mathematics tests.

At the end of the nine-months session -- the freshman year of the summer students and their classmates with whom they were matched -- outcomes were assessed by comparing the initial and final test performances of the matched pairs. The same initial and final tests in reading, English, written composition, mathematics, and study methods were administered to both members of the pairs; however, for the students who had participated in the summer program, the initial tests had been administered at the beginning of the summer sessions, while for the students with whom they were matched, the initial tests were administered at the beginning of the nine-months term. Both groups were administered the final tests, which were alternate forms of the initial tests, at the end of the nine-months term.

Further, at the close of the nine-months term, comparisons were made of the English and mathematics semester grades and of mid-first, first, and second semester grade-point averages earned by the students who had been in the summer program and the students with whom they were matched.

Student's $\underline{t}$ for determining the reliability of the difference between correlated means was employed to test the significance of the difference between initial and final performances on the reading, English, mathematics, and study methods tests. The sign test was used to test the significance of the difference between initial and final performances on the essay test and to determine the significance of differences in semester grades. The Wilcoxon Matched-Pairs Signed-Ranked Test was applied to test the significance of differences in semester grade-point averages. In every comparison, an interest in positive outcomes necessitated the use of the one-tailed test. Differences that reached the five per cent level of confidence were considered significant.

Reading

Data on the question of whether or not the students made substantial improvement in reading appear in Table 8 which shows comparisons of the means of the summer students on reading tests administered at the beginning and end of the summer sessions. These comparisons reveal that the students made significant gains in reading during each summer session.

Further evidence of the extent of improvement in reading over the summer sessions is provided by the following interpretations of the initial and final means in terms of relevant test norms.

1. For students in the summer session of 1959, the initial mean of 51.3 and the final mean of 54.0 obtained on the Reading Comprehension Tests of the Cooperative English Test correspond fairly closely to the means for the end of grades 11 and 12, which are 50.8 and 53.8, respectively.[1] In other words, at the beginning of the sessions the average level of reading ability of the students was like that of the student in the norming sample who were at the end of the 11th grade, while at the end of the summer session, the average level of reading ability of the student was like that of students in the norming sample who were at the end of the 12th grade. The students in the norming sample referred to in the foregoing statement were in public secondary schools with 12-grade systems in the East, Middle West, and West. Norms for the public schools in the South were not useful for making comparisons because they are based on the schools with 11-grade systems.

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[1] Cooperative Sequential Tests of Educational Progress, Technical Report, Princeton, N.J. Cooperative Test Division, Educational Testing Science, p. 23.

TABLE 8

Comparative Means of Summer Students on Reading Tests

(Alternate form administered approximately 7 weeks following initial test)

Summer	N	Mean		Difference	SD_D	SE_D	t	p
		Initial	Final					
1959	89	51.3	54.0	2.7	6.40	.80	3.25	$<.01$*
1960	50 (timed)	291.30	300.62	9.32	9.18	1.30	7.00	$<.01$*
	50 (untimed)	289.25	301.66	12.30	11.50	1.63	7.55	$<.01$*
1961	85	294.36	296.60	2.24	7.12	.77	2.91	$<.01$*

Note.--Cooperative Reading Comprehension Test, Lower Level, Forms x and y administered in 1959. Sequential Tests of Educational Progress Reading Test, Forms A and B, administered timed to one-half of the students and untimed to the other half in 1960 and administered timed to all in 1961.

*Significant

2. For those students in the 1960 summer sessions to whom the STEP Reading Test was administered according to the standard directions accompanying the test, the initial mean of 291.30 is approximately .1 of a standard deviation above the test mean for the beginning of grade 11, which is 289.5, and the final mean of 300.62 is approximately .4 of a standard deviation above the test mean for the beginning of grade 12, which is 293.7. The standard deviation for grade 11 and 12 is 17.[1] Hence, it may be said that at the beginning of the summer, the average level of reading ability of the students was like that of students in the norming sample who were at the beginning of the 11th grade; at the end of the summer session, the average level of reading ability of the students was above that of students in the norming sample who were at the beginning of grade 12; or, expressed in terms of grade equivalents interpolated by the writer, the average level of reading ability was at 12.5. The norms for the STEP test are for a national sample comprising schools "so chosen that the representation from each of nine geographic regions is similar to the proportions in the United States," and colleges so chosen that representation reflects the nation "as accurately as possible."

3. For the 1961 summer students, the initial mean of 294.36 on the STEP is approximately at the test mean for students beginning grade 12, and the final mean of 296.60 falls at approximately .2 of a standard deviation above the test mean for grade 12. Thus, at the

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[1] Cooperative Sequential Test of Educational Progress, Technical Report, Princeton, N.J., Cooperative Test Division, Educational Testing Service, p. 23.

beginning of the session, the average level of reading ability of the students was comparable to that of students in the norming sample who were at the beginning of grade 12; at the end of the session the average level of reading ability of the students was slightly above that of the students in the norming sample who were beginning grade 12 or, expressed in terms of interpolated grade equivalents, the average level of reading ability was 12.2.

The comparative mean changes of summer school participants and nonparticipants on the Cooperative Reading Comprehension Test administered at the beginning and end of the periods that included the school years following each of the summer programs provided another source of data on the question of improvement in reading. Findings in Table 9, based on data shown in Appendix L, indicate that for the period including the 1959-60 school year, differences between mean changes of the participants and nonparticipants are not statistically significant; while for both of the periods including the 1960-61 and 1961-62 school years, differences between mean changes of the participants exhibit a greater gain.

The foregoing evidence concerning the influence of the summer programs on the reading ability of the students who participated in them suggests the following conclusions:

1. Students made substantial improvement in reading over each of the three summers as shown by mean changes from initial to final testing on the Cooperative Reading Comprehension Test, Comparisons in terms of test norms suggest that the amount of improvement reflected in mean gains during the summers of 1959, 1960, and 1961 represents the average increase that can be expected to take place from grades 11 to 12, 11 to 12.5, and 12 to 12.2, respectively. Hence, the average gain in reading for the three summer periods was equivalent to approximately one year.

TABLE 9

Comparative Mean Changes of Summer School Participants and Nonparticipants on the Cooperative Reading Comprehension Test, Lower Level

Year	Number of matched pairs	Mean Changes June-May Participants	Mean Changes September-May Nonparticipants	Difference	SD_D	SE_D	t	p
1959-60	38	3.96	2.40	1.56	6.24	1.01	1.64	>05
1960-61	72	4.46	2.67	1.79	6.15	.72	2.47	<.01*
1961-62	56	6.04	2.45	3.59	5.60	.75	4.80	<.01*

Note.--The revised 1960 edition administered in 1959-60, 1960-61.

*Significant

2. Students who had participated in the summer program of 1960 and students who had participated in the summer program of 1961 made substantial improvement in reading over the periods including the 1960-61 and 1961-62 school years, respectively, as shown by comparisons of the mean changes of these students from initial to final testing on the Cooperative Reading Comprehension Test with those of students who had not participated in the summer program.

3. Students who had participated in the summer program of 1959 did not show substantial improvement in reading over the period including the 1959-60 school year when these students and those who had not participated in the program were compared in terms of mean changes from initial to final testing on the Cooperative Reading Comprehension Test.

Written Expression

Did the students improve substantially in the ability to express themselves in writing?

Changes in writing abilities and skills were assessed over only one of the three summer sessions, the 1959 session, during which the Cooperative English Tests and the STEP Essay Test were administered. However, over each of the three freshman-year periods, students who participated in the summer program and the nonparticipants with whom they were matched were administered the Cooperative English Tests. Only during the 1961-62 freshman year period were both groups administered the STEP Essay Test.

Comparisons of the initial and final test means of the summer students on the Cooperative English Test administered during the summer session of 1959 are presented in Table 10. It will be noted that on both the Mechanics of Expression and the Effectiveness of Expression Tests the differences between the initial and final test means are significant. These findings suggest that the students made substantial improvement in the abilities and skills measured by these tests.

TABLE 10

Comparative Means of Summer Students on the Cooperative English Tests, Lower Level, Administered During the Summer of 1959

(Alternate form administered approximately 7 weeks following initial test)

Test	N	Mean		Difference	SD_D	SE_D	t	P
		Initial	Final					
Mechanics of Expression	89	48.40	51.90	3.50	5.80	.60	5.80	<.01*
Effectiveness of Expression		39.80	41.70	1.90	2.80	.30	6.30	<.01*

*Significant

When the means shown in Table 10 are interpreted in terms of test norms based on a large sample of students in public secondary schools of the East, Middle West, and West (norms for public schools of the South were not used because the schools that comprised the sample had only 11 grades) the following findings are revealed:[1]

1. The initial and final means obtained by summer students on the Mechanics of Expression Test fall slightly above, less than .2 of a standard deviation, the means obtained by students in the norming sample who were at the end of grades 10 and 11, respectively. In the norming sample the mean of grade 10 is 47.2 and the standard deviation is 8.9; the mean of grade 11 is 50.5 and the standard deviation is 9.2.

2. The initial and final means obtained by summer students on the Effectiveness of Expression Test fall slightly above, less than .2 of a standard deviation, the means obtained by students in the norming sample who were at the end of grades 8 and 9, respectively. For this norming sample the mean of grade 8 is 38.7 and the standard deviation is 8.6; the mean of grade 9 is 42.9 and the standard deviation is 8.8.

Table 11 shows that after comparisons were made of the ranks assigned to the 89 pairs of essays -- one of each pair having been written by a student at the beginning of the summer session and the other at the end -- 56 pairs were found to have different ranks on the initial and final essays. Of this number, 38 had the higher rank on the final essay and 15 had the lower rank on the final essay. The sign test applied to these results indicates that a significantly larger number of the pairs had higher rank on the final essays and suggests that a significantly larger number of the summer students improved in writing essays than did those who appeared to retrogress.

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[1] Cooperative English Test, Single Booklet Edition, All Forms, Percentile Ranks for High School and College Students, Princeton, N.J., Cooperative Test Division, Educational Testing Service, pp. 2-3.

TABLE 11

Sign Test Applied to Ranks Given to Essays Written by Summer School Participants During the Summer of 1959

(Alternate form of STEP Essay Test administered approximately 7 weeks following initial test)

Sets of initial and final essays			z	P
All	Signed	Negative-signed		
89	53	15	3.02	.01*

Note.--Essay tests were not administered at beginning and end of 1960 and 1961 summer sessions.

*Significant

Further data on the extent to which summer students improved in written expression is found in Table 12, based on data given in Appendix M, which presents the comparative mean changes of summer school participants and nonparticipants on the Cooperative English Tests. For the period including the school year of 1959-60, the mean changes of the participants on the Mechanics of Expression Test indicate a significantly greater gain than that of the nonparticipants, while on the Effectiveness of Expression Test, the difference

TABLE 12

Comparative Mean Changes of Summer School Participants and Nonparticipants on the Cooperative English Tests, Lower Level

Year	Test	Number of matched pairs	Mean Changes June-May Participants	Mean Changes September-May Nonparticipants	Difference	SD_D	SE_D	t	p
1959-60	Mechanics of Expression	45	9.33	5.67	3.66	10.25	1.55	2.36	$<.05$*
	Effectiveness of Expression	45	4.26	2.40	1.86	7.96	1.18	1.57	$>.05$
1960-61	Expression	72	4.35	2.85	1.50	7.82	.92	1.63	$>.05$
1961-62	Expression	56	6.32	3.04	3.28	7.25	.97	3.39	$<.01$*

*Significant

between mean changes of the two groups is not statistically significant. For the period including the school year of 1960-61, the difference between mean changes of the participants and the nonparticipants is not statistically significant, but for the period including the school year of 1961-62, the difference between mean changes of the two groups is statistically significant with the participants having made the greatest gain.

The results of the sign test applied to the comparative changes in ranks assigned to the initial and final essays of the summer school participants and the students with whom they were matched are given in Table 13. It will be noted that significantly more of both the participants and the nonparticipants received higher ranks on the final than on the initial essays. However, a comparison of the difference in signs of the matched pairs revealed that there is no

TABLE 13

Sign Test Applied to Ranks Given to Essays Written by Participants and Nonparticipants, 1961-52

Group	Sets of initial and final essays*			z	P
	All	Signed	Negative-signed		
Participants	48	29	8	2.23	.01
Nonparticipants	48	31	6	3.23	.01
Difference	48	38	21	.50	.31

*Initial and final essays for participants--June, 1961, and May, 1962--for nonparticipants--September, 1961, and May, 1962.

significant difference between the sign changes of the matched pairs.

The foregoing findings on the question of whether or not students improved in writing abilities and skills support the following conclusions:

1. Students made substantial improvement in English expression over the summer of 1959--the only summer period during which changes in writing abilities and skills were assessed--as shown by mean changes from initial to final testing on the Mechanics and Effectiveness of Expression Tests of the Cooperative English Tests and as shown by a comparison of ranks assigned to initial and final performances on the STEP Essay Tests. Comparisons with test norms suggest that the amount of improvement reflected in the mean gains is equivalent to approximately one year.

2. Students who had participated in the summer program of 1959 made a significantly greater improvement in mechanics of expression over the period including the school year of 1959-60 than did nonparticipants as evidenced by comparative mean changes from initial to final testing on the Mechanics of Expression Test of the Cooperative English Test. However, a similar comparison of results from the Effectiveness of Expression Test revealed no significant differences.

3. Students who had participated in the summer program of 1961 improved more in English expression over the period including the school year of 1961-62 than did nonparticipants as shown by comparative mean changes from initial to final testing on the English Expression Tests of the Cooperative English Test. However, for the same period the comparative performances of the two groups on the STEP Essay Tests revealed that the participants had made no more improvement than nonparticipants.

4. Students who had participated in the summer program of 1960 did not improve significantly in English expression when compared with nonparticipants in terms of mean changes from initial to final testing on the Cooperative English Expression Test.

Mathematics

Comparisons of the initial and final test means of summer students on mathematics tests yielded statistically significant results as shown in Table 14. These data indicate that students made substantial gains in mathematics over each of the three summer periods. Additional interpretations of these gains, based on statistical data given in the Technical Report on the STEP tests, are as follows:

1. At the beginning of the summer session of 1960 the mean of the students on the STEP Mathematics Test, when administered according to the standard directions, was equivalent to the test mean for grade 10 which is 268.1. At the end of the summer session of 1960 the mean of the students was approximately at the test mean for grade 11 which is 273.1.

2. At the beginning and end of the summer session of 1961 the mean of the students on the STEP Mathematics Test was within reach, less than one-tenth standard deviation, of the mean of grade 11 and 13, respectively. The test mean of grade 11 is 273.1 and for grade 13, 280.4, while the standard deviation for both grades is 16.

Comparisons of mean changes of participants and nonparticipants from initial to final testing over the period including the school year following each summer session are presented in Table 15 which is based on data reported in Appendix N. These comparisons reveal that the summer school participants of 1959 and those of 1961 made significantly greater improvement in mathematics than did the nonparticipants with whom they were matched. Although the mean gain of the 1960 summer school participants exceeded that of the nonparticipants, the difference was not large enough to be statistically significant.

In answer to the question of whether or not summer students

TABLE 14

Comparative Means of Summer Students on Mathematics Tests

(Alternate form administered approximately 7 weeks following initial test)

Summer	Test	N	Mean		Difference	SD_D	SE_D	t	p
			Initial	Final					
1959	Cooperative, for grades 7, 8, and 9	89	52.5	54.9	2.6	4.6	.5	5.2	<.01*
	Cooperative Pretest for College Students	88	12.9	14.1	1.2	4.4	.5	2.6	.01*
1960	STEP , Level 1 (Timed)	51	268.57	272.45	3.88	13.47	1.90	2.04	<.05*
	STEP, Level 1 (Untimed)	48	274.79	279.15	4.36	9.33	1.36	3.21	<.01*
1961	STEP, Level 1	84	271.81	278.59	6.78	10.63	1.16	5.84	<.01

*Significant

TABLE 15

Comparative Mean Changes of Summer School Participants and Nonparticipants on Mathematics Tests

Year	Test	Number of matched pairs	Mean Changes June-May Participants	 September-May Nonparticipants	Difference	SD_D	SE_D	t	p
1959-60	Cooperative Pretest for College Students	42	3.14	.24	2.90	5.92	.91	3.17	$<.01$*
1960-61	STEP. Level	29	7.76	5.28	2.48	20.66	3.84	.65	$>.05$
1961-62	STEP. Level	30	10.53	4.30	6.23	18.41	3.36	1.85	$<.05$*

*Significant

made substantial improvement in mathematics abilities and skills, the following conclusions seem warranted:

1. Students made substantial improvement in mathematics over each of the three summer periods as shown by statistically significant mean gains from the initial to the final testing on the Cooperative Mathematics Test for grades 7, 8 and 9 and the Cooperative Mathematics Pretest for College Students administered in 1959 and the STEP Mathematics Test administered in 1960 and 1961. The results for the summer period of 1960 suggest that the amount of improvement reflected in mean gains represented approximately the average increase that can be expected to take place from grades 10 to 11. Similarly, the results for the summer period of 1961 represents approximately the average increase that can be expected to take place from grades 11 to 13.

2. Students who had participated in the summer program of 1959 and those who had participated in 1961, made significantly greater gains in mathematics over the period including the freshman year following the summer program as shown by comparisons of the mean changes of these students from initial to final testing on standardized mathematics tests with those of students who had not participated in the summer program. While the mean gain of the students who had participated in the summer program of 1960 exceeded that of nonparticipants, the difference was not statistically significant.

Study methods

It was expected that students who had participated in the summer program would evidence better methods of study during their freshman year in college than would fellow freshmen who had not participated in the program. Table 16, based on data in Appendix O, presents comparisons of the mean changes of the participants and nonparticipants on the California Study Methods Survey which was administered during the periods including the school years of 1960-61 and 1961-62. In only one instance does the comparative mean change indicate that the participants showed more favorable study methods: on the Mechanics of Study Test administered during

TABLE 16

Comparative Mean Changes of Summer School Participants and Nonparticipants on the California Study Methods Survey

Year	Test	Number of matched pairs	Mean Changes June-May Participants	 September-May Nonparticipants	Difference	SD_D	SE_D	t	p
1960-61	Attitudes Toward School	57	- 5.83	- 2.93	- 2.46	10.98	1.45	1.70	.05*
	Mechanics of Study		3.09	1.07	2.02	10.90	1.44	1.40	>.05
	Planning and System		1.17	- 1.02	2.19	12.42	1.64	1.33	>.05
	Total		- .96	- 1.44	.47	8.98	1.19	.40	>.05
1961-62	Attitudes Toward School	48	- 5.27	- 3.69	- 1.58	11.14	1.61	.98	>.05
	Mechanics of Study		1.79	- .75	2.54	9.45	1.36	1.86	<.05
	Planning and System		- .21	- 2.77	2.56	13.58	1.94	1.32	>.05
	Total		- 2.02	- 2.83	.81	8.80	1.27	.64	>.05

Note.--A positive difference indicates participants made greater gain; a negative difference indicates the nonparticipants made the greater gain.

*Significant

the period including the 1961-62 school year. All other differences between the mean changes, while in the expected direction, are not statistically significant except the differences between mean changes on the Attitude Toward School Test. These differences are in the opposite direction both years, and for 1960-61 the difference is significant.

The following conclusions are noted concerning the influence of the summer program on the study methods of the participants:

1. Students who participated in the summer program of 1961 improved significantly in mechanics of study over the period including the freshman year following the summer program, as shown by a comparison of the mean changes of these students and nonparticipants on the California Study Methods Survey. Similar comparisons revealed that these students did not improve in study methods involving planning and system and that they had less favorable attitudes toward school.
2. Students who participated in the summer program of 1960 did not improve significantly in mechanics of study, planning and system, and attitudes toward school over the period including the freshman year following the summer program, as shown by the comparative mean changes of these students and nonparticipants on the California Study Methods Survey.

Semester grades

Each student who participated in the summer program and the student with whom he was matched were enrolled in the same English course during their freshman year; hence, all pairs in which both members received a letter grade of A, B, C, D, or F were used to compare semester grades in the English course. The situation was different for the mathematics courses: some members of both groups did not take a course in mathematics and members of some pairs were not enrolled in the same course. For these reasons, only pairs in which both members took the same mathematics course and both members received one of the typical letter grades were used to compare semester grades in the mathematics courses.

Did the students who participated in the summer program receive higher semester grades in English and mathematics courses during their freshman year?

Table 17 shows the results from the sign test used to examine the hypothesis that the number of pairs in which a participant received the higher grade is greater than the number of pairs in which a nonparticipant received the higher grade. It will be noted that at mid-first semester and at the end of the first semester of the school years of 1959-60 and 1961-62, there are a significantly greater number of pairs in which the students who participated in the summer program received the higher grade in English. While each of the other comparisons of English grades reveals a greater number of pairs in which the participant received the higher grade, the number is not significantly greater.

With respect to the mathematics grades, Table 17 shows that in only two cases--at mid-first semester and end of first semester, 1959-60--are there a significantly greater number of pairs in which the student who participated in the summer program received the higher grade, although for each of the other comparisons there are more pairs in which the higher grade was received by a summer school participant.

Comparative data on semester grade-point averages are presented in Table 18 which gives the results from the Wilcoxon Matched-Pairs

TABLE 17

Sign Test Applied to Semester Grades Received by Summer School Participants and Nonparticipants in English and Mathematics Courses

Year	English grades					Mathematics grades				
	Number of pairs					Number of pairs				
	Total	Signed	Negative-signed	z	p	Total	Signed	Negative-signed	z	p
1959-60 Semester										
Mid-first	51	33	9	2.43	.01*	31	29	9	1.84	$<.05$*
First	52	36	11	2.17	.01*	31	26	8	1.76	$<.05$*
Second	46	32	12	1.23	.05	28	21	9	-	$>.05$
1960-61 Semester										
Mid-first	83	58	28	0.13	.05	39	27	11	0.77	$>.05$
First	83	50	27	0.42	.05	36	23	10	-	$>.05$
Second	77	38	18	0.16	.05	32	20	10	-	$>.05$
1961-62 Semester										
Mid-first	60	45	17	1.79	.05*	35	23	9	-	$>.05$
First	61	47	12	3.21	.01*	34	29	15	0	$>.05$
Second	49	32	11	1.59	.05	29	23	14	-	$>.05$

*Significant

TABLE 18

Wilcoxon Matched-Pairs Signed-Ranks Test to Semester Grade-Point Averages of Summer School Participants and Nonparticipants

Year	Number of pairs		Sum of negative-ranked	z	p*
	Total	Signed-pairs	Signed-pairs		
1959-60					
Semester					
Mid-first	53	52	491.0	1.80	<.05*
First	53	51	496.5	1.56	>.05
Second	51	49	496.0	1.43	>.05
1960-61					
Semester					
Mid-first	83	83	1319.5	1.91	<.05*
First	83	81	1484.5	0.83	>.05
Second	76	74	1403.5	0.09	>.05
1961-62					
Semester					
Mid-first	68	66	676.5	2.74	<.01*
First	65	65	738.0	2.19	.01*
Second	56	54	570.5	1.48	>.05

Note.--Grade point averages multiplied by 100 to eliminate decimals.

*Significant

Signed-Ranks Test used to determine whether the semester grade-point averages of students who participated in the summer program were higher than those of the nonparticipants, that is, whether the sum of the positive-ranked pairs, those with the participants having the higher grade-point average, is larger than the sum of the negative-signed ranked pairs, those with the participants having the lower grade-point average. It will be noted that at mid-first semester of each of the three years and at the end of the first semester of 1961-62 the students who had participated in the summer programs achieved the highest grade-point averages. The decreasing value of z suggests that during each school year the differences between the grade-point averages of the participants and the nonparticipants tended to decrease from mid-first semester to the end of first semester and from end of first semester to end of second semester.

The foregoing data provide evidence for the following conclusions:

1. Students who had participated in the summer program received higher grades in their freshman English courses than did nonparticipants at two reporting times during two of the three years of the project: at mid-first semester and at the end of the first semester of 1959-60 and 1961-62.

2. Students who had participated in the summer program received higher grades in their mathematics courses than did nonparticipants at two reporting times during one of the years of the project: at mid-first semester and at the end of the first semester of 1959-60.

3. Students who had participated in the summer program achieved higher semester grade-point averages than did nonparticipants at mid-first semester of each of the three years of the project and at the end of the first semester of 1961-62.

4. Students who had participated in the summer program tended to exhibit decreasing superiority over nonparticipants in terms of semester grade-point averages from mid-first semester to the end of first semester and from the first semester to the end of the second semester.

Students' Reactions

Students' reactions as revealed through the Personal Reactions Inventory and the Sentence Completion Exercise are summarized and interpreted in the sections that follow.

Personal Reactions Inventory

At the close of the summer program of 1960, ninety-six students responded to the Personal Reactions Inventory designed to elicit anonymous responses to items that required comparisons between summer school experiences and experiences during senior year of high school. Eighty-nine students responded to the Inventory at the close of the summer program of 1961. Similarly, at the end of their freshman year of college, seventy-four, eighty-six, and sixty-five of the students who had participated in the summer programs in 1959, 1960, and 1961, respectively, responded to a parallel form of the Inventory that required comparisons between freshman year and summer school experiences. A descriptive summary of the results is presented in Table 19, and the statistical data on which the summary is based are shown in Appendix P.

In general, comparisons of the summer program with the senior year of high school reveal that the students found the summer program a more competitive and demanding academic situation that kept them under more pressure and allowed less time for relaxation.

TABLE 19

Comparisons of Summer Program With the Senior Year of High School

and With the Freshman Year of College

(Based on data from the Personal Reactions Inventory administered at end of summer and at end of the freshman year)

Number of Inventory Item	Basis for comparison (Main part of stem of Inventory item)	How the summer program looked when compared with the senior year in high school		How the freshman year of college looked when compared with the summer program		
		1960	1961	1959-60	1960-61	1961-62
1.	Level of interest and enthusiasm toward studies	higher	higher	higher	higher	higher
2.	Proportionate amount of home work and study done	more	more	more	more	more
3.	Enjoyment from participating in classroom activities	more	more	more	*	*
4.	Competition among students for high grades	stiffer	stiffer	stiffer	stiffer	stiffer
5.	Importance attached to conferences with teachers	greater	greater	greater	*	greater
6.	Tendency of students to ask questions or make comments in class	greater	greater	same	greater	*
7.	Feelings of students toward teachers	no more or less favable	*	less favorable	*	less favorable
8.	Quality of deportment of most of the students	better	better	no better or worse	no better or worse	no better or worse

TABLE 19 - Continued

Number of Inventory Item	Basis for comparison (Main part of stem of Inventory item)	How the summer program looked when compared with the senior year in high school		How the freshman year of college looked when compared with the summer program		
		1960	1961	1959-60	1960-61	1961-62
9.	Amount of time found for relaxation	less	less	less	less	less
10.	Frequency of chats outside class with teachers	*	greater	*	less	less
11.	Inspiration to study	more	more	greater	greater	greater
12.	Seriousness about academic work	greater	greater	greater	greater	greater
13.	Attention and alertness of students in classes	greater	greater	*	*	*
14.	Amount and quality of work required to earn C	higher	higher	higher	higher	higher
15.	Frequency of conferences with teachers	greater	greater	*	less	less
16.	Proportion of class period during which teachers lectured or gave explanations	larger	larger	*	larger	larger
17.	Relations between students and teachers	*	closer	less close	less close	less close
18.	Willingness of students to follow administrative regulations and policies	more	more	*	less	less

TABLE 19 - Continued

Number of Inventory Item	Basis for comparison (Main part of stem of Inventory item)	How the summer program looked when compared with the senior year in high school		How the freshman year of college looked when compared with the summer program		
		1960	1961	1959-60	1960-61	1961-62
19.	Amount of pressure under which work was done from day to day	greater	greater	greater	greater	greater
20.	Percentage of teachers of courses studied with whom it was easy to talk	less	*	smaller	*	*

Note.--For statistical data see Appendix P.

*No significant trend in distribution of responses to item.

On the other hand, in this situation they did proportionately more hours work and studying. Here they felt more inspired to study and more serious about school work; they expressed a higher level of interest and enthusiasm in courses, and enjoyed participating in class activities more. While they felt just as close to and at ease with their summer teachers as they felt toward their high school teachers, they chatted with them more frequently outside of class, conferred with them more frequently about school work, and considered conferences with teachers more valuable. They found students more alert and responsive in classes and better behaved in general.

Comparisons of the freshman year with the summer program suggest that in general the students found that the freshman year provided a more competitive, demanding, and pressing academic environment. Here they did proportionately more home work and studying; they felt more inspired to study and more serious about school work. They noted that teachers spent a larger proportion of the class time giving lectures and making explanations but they did not indicate clearly whether or not they enjoyed classes more or whether or not fellow classmates were more alert and responsive. They felt less close to teachers and chatted with them outside of class less frequently. While they attached greater value to conferences with teachers, they had fewer. They found fellow freshmen no more or less well behaved than were the summer students but less inclined to follow administrative regulations and policies willingly.

Sentence Completion Exercise

The analysis of the results from the Sentence Completion Exercise administered to the summer students at the close of each of the summer sessions revealed marked similarity among the three groups of summer students in terms of their reactions to various aspects of the summer program in which they participated. Because of this similarity and because of the excessive length of the material involved, the summary and interpretation of the responses of the 1961 summer students have been arbitrarily selected for inclusion in this volume. The summary is given in Appendix Q and the interpretation--comprising generalizations along with supporting evidence abstracted from the summary--is presented in this section.

Though based directly upon the Sentence Completion Exercise responses of the students who participated in the 1961 summer program, the interpretations that follow reflect the typical reactions of the 1959 and 1960 summer students, as well. The generous inclusion of students' responses in support of the interpretive statements was dictated by the assumption that the students' own views provide the most effective frame of reference for judging what the program meant to them.

Interpretation of the Responses of the 1961 Summer Students to the Sentence Completion Exercise in Terms of Aspects of the Summer Program Represented in the Exercise

1. Relationships among students, between students and the director, between students and teachers, and among teachers were warm, friendly, and cooperative.

All responses to item 6 of the Exercise suggest that relationships among students were favorable. Typical of 93% of these responses are the following: as a whole, students got along with one another *cooperatively, in perfect accord, like brothers and sisters* (6a)*. In response to other items fellow students are described as *intelligent, mature, a swell bunch, nice guys, ladies* by from 77% to 86% of the group (14a, 15a).

Positive attitudes toward the director are expressed in the responses of 79% of the students who considered him *helpful, understanding, highly intelligent and efficient, inspiring, always available, fun to be around* (19a).

Eighty-four per cent of the students said they believed most of the students felt that the teachers were *kind, lenient, helpful, patient, understanding, devoted, well-trained, inspiring, students' best friends*. Seventy-two per cent of the students made similar comments about teaching assistants (20a). *Teachers* and *their teaching* are mentioned by 63% of the students as that about which most students expressed satisfaction (2a) and *teachers, their efforts... their relationship to students*...rank second among the things students liked about the program (22b).

As viewed by 81% of the students, *the relationship that existed* among *the teachers was friendly, family-like, inspiring*.

2. The classroom environment was conducive to learning.

The classrooms had a *friendly, informal atmosphere*...they *stimulated thinking, contained all the necessary materials*...they were *clean, orderly, not crowded* according to 83% of the students (8a).

3. The methods of instruction were satisfying and motivating.

The *classes* or *courses* and the *teachers* and *teaching methods* are aspects of the program that students enjoyed most and found satisfying as indicated by the responses of 63% (2a) and 51% (22a, 22b).

Although 52% of the students mentioned that one of the things they griped about was *too much home work* (1a) and 13% mentioned *teaching methods* (2c), 58% judged that, in general, the amount of home work expected of them was *just right, appropriately suited to needs...a lot, hard, but helpful and necessary* (7a, 7b). Only 15% considered it *too much, too hard, far beyond the group*...(7d) while, 11% considered it, all or in parts, *not enough* (7e).

4. Conferences with teachers were helpful.

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*Figures in parenthesis refer to number of questionnaire item and summary of responses in Table 52, Appendix Q.

This view is supported by the responses of 92% of the students (3a). For them, conferences provided *individual aid*, *cleared up difficulties*, helped them *know teachers better*.

5. The daily schedule was satisfactory.

For 61% of the students the schedule was *just right* (4a). For 15% it was accepted with reservations while 22% found it *tiring* and *too crowded*...(4c).

6. The tests that students took during the first and last weeks of the summer program were viewed unfavorably.

The initial tests according to 52% of the students were *disliked*,...*long and still*, *unnecessary*, *a shock*, *not indicators of their ability* (16d)...they were considered *tiring but interesting* ...*laborious but necessary*, *not complicated but long* by 21% of the students (16c)...they were viewed in an entirely favorable light by only 22% (16a). The students expressed very similar reactions concerning the final tests.

7. The book reviews and plays that students were required to attend were appreciated.

Typical of the responses of 93% of the students are the following: *The book reviews and plays helped me appreciate fine arts*, *stimulated me to read more*; were *new experiences I learned to enjoy* ...*the best I've seen* (13a).

8. Living in the dormitory was a wonderful, new, wholesome experience.

This generalization is reflected in the responses of more than 79% of the students (11a, 11b).

A roommate was typically regarded as *a best friend*, *a swell girl*, or *an all right fella* by 84% of the students (10a).

9. The food served in the dining halls was excellent or for the most part satisfactory.

Fifty-six per cent of the students found the food *delicious*... *good 7 days per week*...(9a), 11% found it *fair*...(9b), 24% found it *satisfactory in some ways and unsatisfactory in others* (9c), 8% found it *awful*, *terrible*...(9b).

10. The recreation program met students' needs.

Favorable comments about the recreation program were expressed by 79% of the students (12a, 12b). Seventeen per cent considered it good as a whole but lacking in one or more aspects, while 4% were more critical of its limitations.

11. The summer program produced favorable changes in the scholastic abilities and skills (reading, writing, speaking, mathematics, work-study) and improvement in adjustment (involving intrapersonal, student-teacher, and student-student relationships) of the students.

Evidence in support of the foregoing generalization is reflected throughout the responses to the Exercise. However, responses to item 22 -- "Since being here this summer, I" -- point directly to outcomes of the program as viewed by the students. These comments may be noted in the summary.

Participation in Extra-Class Activities

During the Freshman Year

The form designed to reveal information about extra-class activities of participants and nonparticipants during their freshman year was administered at the close of the freshman year following the first and last summer programs. Seventy-one pairs completed the form the first year and sixty-two the last. The frequency and percentage of responses to the items of the form reveal the following results for the participants and nonparticipants during the 1959-60 and 1961-62 school years:

1959-60	1961-62
1. A large proportion of students in both groups--94% of the students who participated in the 1959 summer program and 83% of the nonparticipants--held memberships in campus organizations. While more of the participants were members of organizations, the total number of memberships held by the two groups was approximately the same (139 for the participants and 137 for the nonparticipants).	1. Fewer of the participants held membership in campus organizations than nonparticipants (58% as compared with 72%) and the number of memberships held was fewer (70 as compared with 83).
2. Fewer participants held offices in campus organizations (22% as compared with 31% for nonparticipants) and the total number of offices held by them was one-half as many as those held by nonparticipants.	2. Fewer participants held offices in campus organizations than did nonparticipants (15% as compared with 21%) and the total number of offices held by them was one-half as many held by nonparticipants (6 as compared with 12)
3. Fewer participants rendered special services to the college (services apart from work in organizations; services or performances in connection with projects, programs, activities, etc.) than	3. Fewer participants rendered special services to the college than did nonparticipants (14% as compared with 32%) and the total number of such services was fewer (14 as compared with 34).

did nonparticipants (38% as compared with 44%) and the total number of special performances rendered by them was less (48 as compared with 57).	
4. Fewer participants held campus jobs (10% as compared with 14%) and/or off-campus jobs (11% as compared with 21%) than did nonparticipants and they spent considerably less time per week at these jobs than did nonparticipants (160 hours as compared with 263 hours).	4. Fewer participants held campus jobs (17% as compared with 21%) and/or off campus jobs (5% as compared with 16%) than did nonparticipants and the amount of time they spent at this work has considerably less (95 hours as compared with 297).

These findings support the following conclusions regarding the comparative extent of involvement of participants and nonparticipants in extra-class activities during their freshman year of college:

1. Students who were participants in the 1959 summer program had more individuals in their group who held a membership in a campus organization than did nonparticipants. Further, these participants belonged to a slightly larger number of campus organizations.

2. Students who were participants in the 1961 summer program had fewer individuals in their group who held a membership in a campus organization than did nonparticipants. Further, these participants belonged to a smaller number of campus organizations.

3. Students who were participants in the 1959 or the 1961 summer programs had (a) fewer individuals in their group who held an office in a campus organization and the number of offices held by them was half as many, (b) fewer individuals in their group who rendered special services to their college or gave special performances in connection with college programs and activities, and the total number of services and performances rendered was smaller, and (c) had fewer individuals in their group who held part-time jobs and the total amount of time that they spent in part-time work was smaller.

Hence, in general, the findings suggest that students who had participated in the summer programs were less involved in extra-class activities during their freshman year than were the students with whom they were matched who had not participated in a summer program.

Retention Data

Data based on records obtained in May of 1963 from the registrars at each of the four colleges were analyzed to determine the extent to which students who participated in the summer program remained in these colleges. Table 20 indicates that 259 or 92% of the 280 summer students entered one of the colleges in September following the close of the summer program in which they participated and that 176 or 63% of the 280 summer students are now enrolled in these colleges.

Of the 259 summer students who entered the colleges, 241 of them had been matched with students who had not participated in the summer program. Table 21 shows that of these 241 pairs, 165 participants and 167 nonparticipants, 68% and 69%, respectively, are currently enrolled. Further, Table 21 shows by years the percentage of participants and nonparticipants who are currently enrolled.

TABLE 20

Follow-up Data on the Enrollment of Summer School Participants in the Four Colleges

Summer		Enrollment Freshman year		Current year*	
Year	No.	No.	%	No.	%
1959	90	78	87	50	55
1960	100	94	94	69	69
1961	90	87	97	57	63
Total	280	259	92	176	63

*Data gathered in May, 1963.

TABLE 21

Summer School Participants and Nonparticipants Enrolled in One of the Four Colleges During 1962-63

(Data gathered in May, 1963 and based on 241 matched pairs)

Year entered	Number of matched pairs	Current enrollment					
		Participants			Nonparticipants		
		No.	%	Cum. %	No.	%	Cum. %
1959	78	50	64	68	44	56	69
1960	84	64	76	71	59	70	75
1961	79	51	64	64	64	80	80
Total	241	165	68		167	69	

*Because data are based on 241 rather than 280 students there is some lack of agreement with data in Table 20.

Students in the summer program of 1959 who began their freshman year at one of the four colleges in September of 1959 have had the opportunity to complete four years of college work and to qualify for candidacy for graduation in June of 1963. Seventy-eight of the students from the summer of 1959 began their freshman year at one of the colleges in the fall of 1959. Of this number, Table 22 reveals that 34 (44%) are candidates for graduation and that 32 (42%) of the matching nonparticipants are candidates.

Table 22

Summer School Participants and Nonparticipants of 1959 Who are Candidates for Graduation in June of 1963 From One of the Four Colleges

(Based on 78 matched pairs inclusive of all participants who began the freshman year in one of the four colleges)

Participants		Nonparticipants	
No.	%	No.	%
34	44	32	43

Note.--Two students among participants and three among nonparticipants are included in number of candidates since they would have been eligible for graduation had they not spent a year studying abroad.

The foregoing data support the following conclusions with regard to the question: "Are the students more likely to remain in the colleges?"

1. Ninety-two per cent of the 280 summer students entered one of the four colleges in September following the close of the summer session in which they participated.

2. Approximately the same percentage of summer school participants and nonparticipants, 68 and 69, respectively, have completed at least two years of college in one of the four colleges in which they enrolled.

3. Approximately the same percentage of summer school participants and nonparticipants, 44 and 42, respectively, are candidates for graduation from one of the four colleges in June of 1963.

Student Characteristics Related to Level of Achievement

Data gathered on students who participated in the 1960 and 1961 summer programs and on the students with whom they were matched were examined in an effort to discover relationships between characteristics of students and level of achievement in terms of test performances and semester grade-point averages. The three major questions which quided this investigation and the findings relevant to each are presented in the sections that follow.

Magnitude of Initial Test Score as Related To Gains

The first question is: Do the students who make the lowest scores on initial tests of reading and mathematics improve more in the abilities and skills measured by these tests than do students who make the highest initial scores on these tests? As a first step in seeking an answer to the question, the upper and lower one-third of the distributions of scores on the STEP Reading and Mathematics Tests administered at the beginning of the summer session of 1961 were selected for study. Since alternate forms of these tests were administered at the end of the summer session, it was possible to determine the relationship between magnitude of initial score and gain. Scores on the reading and mathematics tests administered at the beginning and end of the summer session of 1960 were not involved in the analysis because the number of cases for the reading test was halved as a result of the timed and untimed administration of the test.

Mean changes from initial to final testing were computed for the upper and lower one-third of the cases in the distributions of the reading and mathematics test scores for the summer students of 1961. Differences between mean changes of the upper and lower one-third on each test were obtained and the t test was employed to determine whether these differences were significant. Since the question that initiated the inquiry implied the hypothesis that greater gains follow low than follow high initial scores, the one-tailed test was used.

The results are presented in Table 23 which shows that on both the reading and the mathematics test, students with low initial scores made a significant mean gain while students with high initial scores did not.

Do these results properly suggest that the summer program was more effective with students who were initially less capable in reading and mathematics than with those who were initially more capable in these subjects? How do the mean gains of the summer students with high scores and of those with low scores on initial tests

TABLE 23

Comparative Mean Changes on Reading and Mathematics Tests Shown by 1961 Summer Students With Initial Low Scores and Those With Initial High Scores on These Tests

(Alternate forms administered approximately 7 weeks--June to August--following initial tests)

Statistic	STEP Reading Test Low scores	STEP Reading Test High scores	STEP Mathematics Test Low scores	STEP Mathematics Test High scores
N*	26	27	31	31
M_1	284.35	304.15	262.16	281.13
M_2	289.92	303.56	274.32	283.26
M_2-M_1	5.57	-.59	12.16	2.13
SD_D	6.61	7.02	11.54	13.71
SE_D	1.30	1.35	2.07	2.46
t	4.30	.44	5.87	.86
p	.01	.05	.01	.05

*Approximately the lowest 1/3 and highest 1/3 of the scores.

compare with the mean gains of nonparticipants with similar scores? If the summer program were more effective with students who made low rather than high scores on initial tests, then participants with low scores on initial tests would make greater mean gains from the beginning of the summer (June) to the end of their freshman year (May) than that made by nonparticipants from the beginning (September) to the end (May) of their freshman year. Similarly, participants with high scores on initial tests would not make greater gains than nonparticipants with high scores on initial tests.

These comparisons were made with data from the Cooperative Reading Comprehension Test and the Cooperative English Expression Test which were administered initially in 1960-61 and 1961-62 to participants at the beginning of the summer session and to nonparticipants at the beginning of the freshman year and administered finally to both participants and nonparticipants at the end of the freshman year. Similar data were available for the STEP Mathematics Test but these could not be used for making the comparisons because, having to eliminate all pairs in which both members were not enrolled in the same mathematics courses during their freshman year, the number of cases remaining were too few.

Table 24 shows the comparative mean gains from initial to final testing on the Reading Comprehension and English Expression Tests of participants and nonparticipants with high initial scores and those with low initial scores on these tests. The mean gains of the 1960 and 1961 summer school participants with low initial scores on the reading test were not significantly greater than those of nonparticipants with similar initial scores but the mean gains of the 1960 and 1961 participants with high initial scores were significantly greater than those of nonparticipants. Further, all comparisons with data from the English Expression Tests yielded nonsignificant results except in the case of the 1961 summer school participants who made low initial scores. These students made a significantly greater gain in English Expression than did nonparticipants with low initial scores on the test.

TABLE 24

Comparative Mean Changes From Initial to Final Testing on the Cooperative Reading Comprehension and English Expression Tests of Summer School Participants and Nonparticipants With High Initial Scores and Those With Low Initial Scores on These Tests in 1960-61 and 1961-62

(Initial tests administered to participants in June and to nonparticipants in September; final tests administered the following May)

Statistic	Reading								English Expression							
	High initial scores				Low initial scores				High initial scores				Low initial scores			
	1960-61		1961-62		1960-61		1961-62		1960-61		1961-62		1960-61		1961-62	
	Par.	Non-par.	Par.	Non-par.	Par.	Non-par.	Par.	Non-par.	Par.	Non-par.	Par.	Non-par.	Par.	Non-par.	Par.	Non-par.
N*	13	15	12	13	16	16	12	13	17	16	14	14	17	16	14	13
Mean difference from initial to final	2.31	.27	4.17	.38	7.87	5.62	7.25	4.62	1.82	.50	3.43	1.71	6.88	5.56	11.64	7.08
Difference between means	2.04		3.79		2.25		2.63		1.32		1.72		1.32		4.56	
$\underline{SD}_D$	3.02		4.24		4.66		4.14		3.00		3.98		3.74		3.26	
$\underline{SE}_D$	1.14		1.70		1.63		1.66		1.04		1.51		1.30		1.24	
$\underline{t}$	1.79		2.23		1.38		1.58		1.27		1.14		1.00		3.68	
$\underline{p}$	$<.05$		$<.05$		$>.05$		$>.05$		$>.05$		$>.05$		$>.05$		$<.05$	

*Approximately the upper 1/5 and the lower 1/5 of the scores.

These findings lead to the following conclusions:

1. Students who were initially poorer readers (those with scores among the lower one-third of the group on the initial test) made significantly greater gains during the 1960 and 1961 periods of summer instruction than did students who were initially better readers (those with scores among the upper one-third of the group on the initial test); however, the students who were initially better readers appeared to have profited more from the summer instruction. Over the period including the school year following each of the summer sessions the mean gains of these students were significantly greater than those of nonparticipants with similar initial scores while the mean gains of the poorer readers were not significantly greater than those of nonparticipants with similar initial scores.

2. Students who were initially poorer in English expression (those with scores among the lower one-fifth of the group on the initial test) appeared to have profited no more or less from the instruction in English during the summer of 1960 than did students who were initially better in English expression (those with scores among the upper one-fifth of the group on the initial test). Over the period including the 1960-1961 school year, the mean gain of the summer students with low initial scores was not significantly different from that of nonparticipants with similar scores and the mean gain of the summer students with high initial scores was not significantly different from that of nonparticipants with similar scores.

3. Students who were initially poorer in English expression appeared to have profited more from the instruction in English during the summer of 1961 than did fellow students who were initially better in English expression since, over the period including the 1961-1962 school year, the mean gain of the summer students with low initial scores was significantly greater than that of nonparticipants with similar scores and the mean gain of the summer students with high initial scores was not significantly different from that of nonparticipants with similar scores.

4. Students who were initially poorer in mathematics (those with scores among the lower one-third of the group on the initial test) made significantly greater gains during the 1960 and 1961 periods of summer instruction than did students who were initially better in mathematics (those with scores among the upper one-third of the group on the initial test); however, whether or not this finding indicates that the summer program was more effective with the students who were initially poorer in mathematics cannot be determined because of the small number of cases for which appropriate data were available.

Quality of Home Background as Related to Magnitude of Initial Test Scores

The second question is: Do the students who come from home backgrounds of higher quality make higher scores on initial tests than do students from home backgrounds of lower quality? To provide an answer to the question the distributions of scores of the 1960 and 1961 summer students on the social environment questionnaire were studied to identify the students from home backgrounds of higher quality and those from home backgrounds of lower quality. The upper and lower one-third of these distributions of scores were selected and mean scores on Reading, English, and Mathematics tests administered at the beginning of the summer sessions were computed for students who fell in these groups. Then, bi-serial r between home background and initial level of performance on each test was determined. The results appear in Tables 25 and 26 which show that 6 out of 7 comparisons yielded a positive relationship with biserial r's ranging from .04 to .33. The consistency of the relationship rather than the size of r_{bis} suggests that there was a slight tendency for students from better home backgrounds to make higher initial scores.

Quality of Home Background as Related to Achievement

The third question is: How do differences in the quality of the home background of the students relate to level of achievement as shown by semester grade-point averages obtained during the freshman year? To determine the answer to this question, mean grade

TABLE 25

Comparison of Initial Level of Performance on Achievement Tests Shown by Students From Home Backgrounds of High Quality and Students From Home Backgrounds of Low Quality Who Participated in the Summer Program, 1960

Statistic	Cooperative English Tests: Total English		Cooperative English Tests: Total Reading		STEP Mathematics Test	
	High home	Low home	High home	Low home	High home	Low home
Mean	151.74	151.00	150.81	151.04	278.15	272.17
N	27	23	27	23	27	23
SD	5.77		5.90		11.40	
r_{bis}	.08		.02		.33	

TABLE 26

Comparison of Initial Level of Performance on Achievement Tests Shown by Students From Home Backgrounds of High Quality and Students From Home Backgrounds of Low Quality Who Participated in the Summer Program, 1961

Statistic	Cooperative English Tests: Total English		Cooperative English Tests: Total Reading		Cooperative English Test: Level of Comprehension		STEP Reading Test		STEP Mathematics Test	
	High home	Low home	High home	Low home	High home	Low home	High home	Low home	High home	Low home
Mean	150.04	148.39	148.48	147.22	154.41	152.09	296.86	294.43	273.41	272.78
N	22	23	22	23	22	23	22	23	22	23
SD	5.58		5.68		7.58		8.41		9.87	
$\underline{r}_{bis}$	.18		.13		.19		.18		.04	

point averages for semester grades reported in 1960-61 and 1961-62 were computed for students whose scores on the social environment questionnaire were among the upper one-fourth of the group and for those whose scores were among the lower one-fourth; then bi-serial _r's_ between home background and semester grade-point averages were computed. The results are given in Table 27 which shows that for each of the six comparisons the _r's_ are negative and range from -.02 to -.21. The consistency of the relationships rather than the magnitude of the _r's_ suggests that students from the poorest home backgrounds tended to achieve the highest grades.

Would this relationship have obtained if the students had not participated in the summer program? Comparisons of the mean grade-point averages of nonparticipants from home backgrounds of lowest quality with those of nonparticipants from home backgrounds of higher quality are presented in Table 28. Again, the bi-serial _r's_ are all negative, ranging from -.07 to -.33. And, again, it is the consistency of results rather than the magnitude of the _r's_ which suggests that the students from poorer home backgrounds achieved higher grade-point averages than their fellow classmates who were from better home backgrounds. Thus, since this association between high achievement and poor home background tends to hold for students who did not participate in the summer program as well as for those who did, the association can not properly be attributed to the summer program.

TABLE 27

Comparison of Semester Grade-point Averages (Mid-first, First, and Second) Obtained During the Freshman Year by Students From Home Backgrounds of "High" Quality and Students From Home Backgrounds of "Low" Quality Who Participated in the Summer Program, 1950 and 1951

Statistic	1950-1951						1951-1952					
	Mid-first		First		Second		Mid-first		First		Second	
	High home	Low home	High home	Low home	High home	Low home	High home	Low home	High home	Low home	High home	Low home
Mean G.P.A.	239.63	241.55	229.15	244.55	230.77	241.41	212.31	218.75	195.44	221.71	208.54	235.59
N	27	23	27	23	25	22	15	24	15	24	14	23
SD	55.8		49.4		53.7		71.8		73.4		80.2	
r_{tis}	-.02		-.20		-.12		-.06		-.21		-.21	

Note.--"High" and "low" quality defined in terms of upper and lower ¼ of the distribution of scores on the Social Environment Questionnaire.

TABLE 28

Comparison of Semester Grade-point Averages (Mid-first, First, and Second) Obtained During the Freshman Year by Students From Home Backgrounds of "High" Quality and Students From Home Backgrounds of "Low" Quality Who Did Not Participate in a Summer Program

Statistic	1950 - 1951						1951 - 1952					
	Mid-first		First		Second		Mid-first		First		Second	
	High home	Low home	High home	Low home	High home	Low home	High home	Low home	High home	Low home	High home	Low home
Mean G.P.A.	225.05	223.05	216.44	233.00	229.55	235.13	195.17	201.40	193.54	232.10	210.32	243.44
N	18	16	18	16	16	15	23	10	22	1[illegible]	22	9
SD	56.4		55.8		53.7		55.4		54.2		50.4	
r_{bis}	-.07		-.19		-.08		-.07		-.36		-.33	

Note.--"High" and "low" quality defined in terms of upper and lower $\frac{1}{4}$ of the distribution of scores on the Social Environment Questionnaire.

Summary of Conclusions

The results of this study support the following conclusions:

Reading

1. Students made substantial improvement in reading over each of the three summers as shown by mean changes from initial to final testing on the Cooperative Reading Comprehension Test, comparisons in terms of test norms suggest that the amount of improvement reflected in mean gains during the summers of 1959, 1960, and 1961 represents the average increase that can be expected to take place from grades 11 to 12, 11 to 12.5, and 12 to 12.2, respectively. Hence, the average gain in reading for the three summer periods was equivalent to approximately one year.

2. Students who had participated in the summer program of 1960 and students who had participated in the summer program of 1961 made substantial improvement in reading over the periods including the 1960-61 and 1961-62 school years, respectively, as shown by comparisons of the mean changes of these students from initial to final testing on the Cooperative Reading Comprehension Test with those of students who had not participated in the summer program.

3. Students who had participated in the summer program of 1959 did not show substantial improvement in reading over the period including the 1959-60 school year when these students and those who had not participated in the program were compared in terms of mean changes from initial to final testing on the Cooperative Reading Comprehension Test.

Written Expression

4. Students made substantial improvement in English expression over the summer of 1959--the only summer period during which changes in writing abilities and skills were assessed--as shown by mean changes from initial to final testing on the Mechanics and Effectiveness of Expression Tests of the Cooperative English Tests and as shown by a comparison of ranks assigned to initial and final performances on the STEP Essay Tests. Comparisons with test norms suggest that the amount of improvement reflected in the mean gains is equivalent to approximately one year.

5. Students who had participated in the summer program of 1959 made a significantly greater improvement in mechanics of expression over the period including the school year of 1959-60 than did nonparticipants as evidenced by comparative mean changes from initial to final testing on the Mechanics

of Expression Test of the Cooperative English Test. However, a similar comparison of results from the Effectiveness of Expression Test revealed no significant differences.

6. Students who had participated in the summer program of 1961 improved more in English expression over the period including the school year of 1961-62 than did nonparticipants as shown by comparative mean changes from initial to final testing on the English Expression Tests of the Cooperative English Test. However, for the same period the comparative performances of the two groups on the STEP Essay Tests revealed that the participants had made no more improvement than nonparticipants.

7. Students who had participated in the summer program of 1960 did not improve significantly in English expression when compared with nonparticipants in terms of mean changes from initial to final testing on the Cooperative English Expression Test.

Mathematics

8. Students made substantial improvement in mathematics over each of the three summer periods as shown by statistically significant mean gains from the initial to the final testing on the Cooperative Mathematics Test for grades 7, 8 and 9 and the Cooperative Mathematics Pretest for College Students administered in 1959 and the STEP Mathematics Test administered in 1960 and 1961. The results for the summer period of 1960 suggest that the amount of improvement reflected in mean gains represents approximately the average increase that can be expected to take place from grades 10 to 11. Similarly, the results for the summer period of 1961 represents approximately the average increase that can be expected to take place from grades 11 to 13.

9. Students who had participated in the summer program of 1959 and those who had participated in 1961, made significantly greater gains in mathematics over the period including the freshman year following the summer program as shown by comparisons of the mean changes of these students from initial to final testing on standardized mathematics tests with those of students who had not participated in the summer program. While the mean gain of the students who had participated in the summer program of 1960 exceeded that of nonparticipants, the difference was not statistically significant.

Study Methods

10. Students who participated in the summer program of 1961 improved significantly in mechanics of study over the

period including the freshman year following the summer program, as shown by a comparison of the mean changes of these students and nonparticipants on the California Study Methods Survey. Similar comparisons revealed that these students did not improve in study methods involving planning and system and that they had less favorable attitudes toward school.

11. Students who participated in the summer program of 1960 did not improve significantly in mechanics of study, planning and system, and attitudes toward school over the period including the freshman year following the summer program, as shown by the comparative mean changes of these students and nonparticipants on the California Study Methods Survey.

Semester Grades

12. Students who had participated in the summer program received higher grades in their freshman English courses than did nonparticipants at two reporting times during two of the three years of the project: at mid-first semester and at the end of the first semester of 1959-60 and 1961-62.

13. Students who had participated in the summer program received higher grades in their mathematics courses than did nonparticipants at two reporting times during one of the years of the project: at mid-first semester and at the end of the first semester of 1959-60.

14. Students who had participated in the summer program achieved higher semester grade-point averages than did nonparticipants at mid-first semester of each of the three years of the project and at the end of the first semester of 1961-62.

15. Students who had participated in the summer program tended to exhibit decreasing superiority over nonparticipants in terms of semester grade-point averages from mid-first semester to the end of first semester and from the first semester to the end of the second semester.

Students' Reactions

16. Students' comparisons of the summer program with their senior year in high school suggest that in general they found the summer program a more competitive and demanding academic situation that kept them under more pressure and allowed less time for relaxation. On the other hand, in this situation they did proportionately more hours work and studying. Here they felt more inspired to study and more

serious about school work; they expressed a higher level of interest and enthusiasm in courses, and enjoyed participating in class activities more. While they felt just as close to and at ease with their summer teachers as they felt toward their high school teachers, they chatted with them more frequently outside of class, conferred with them more frequently about school work, and considered conferences with teachers more valuable. They found students more alert and responsive in classes and better behaved in general.

17. Students' comparisons of their freshman year in college with the summer program suggest that in general they found that the freshman year provided a more competitive, demanding, and pressing academic environment. Here they did proportionately more home work and studying; they felt more inspired to study and more serious about school work. They noted that teachers spent a larger proportion of the class time giving lectures and making explanations but they did not indicate clearly whether or not they enjoyed classes more or whether or not fellow classmates were more alert and responsive. They felt less close to teachers and chatted with them outside of class less frequently. While they attached greater value to conferences with teachers, they had fewer. They found fellow freshmen no more or less well behaved than were the summer students but less inclined to follow administrative regulations and policies willingly.

18. Students' reactions to various aspects of the summer program may be described as follows:

    a. Relationships among students, between students and the director, between students and teachers, and among teachers were warm, friendly, and cooperative.

    b. The classroom environment was conducive to learning.

    c. The methods of instruction were satisfying and motivating.

    d. Conferences with teachers were helpful.

    e. The daily schedule was satisfactory.

    f. The tests that students took during the first and last weeks of the summer program were viewed unfavorably.

    g. The book reviews and plays that students were required to attend were appreciated.

    h. Living in the dormitory was a wonderful, new, wholesome experience.

    i. The food served in the dining halls was excellent or for the most part satisfactory.

j. The recreation program met students' needs.

k. The summer program produced favorable changes in the scholastic abilities and skills (reading, writing, speaking, mathematics, work-study) and improvement in adjustment (involving intra-personal, student-teacher, and student-student relationships) of the students.

Participation in Extra-Class Activities During the Freshman Year

19. Students who were participants in the 1959 summer program had more individuals in their group who held a membership in a campus organization than did nonparticipants. Further, these participants belonged to a slightly larger number of campus organizations.

20. Students who were participants in the 1961 summer program had fewer individuals in their group who held a membership in a campus organization than did nonparticipants. Further, these participants belonged to a smaller number of campus organizations.

21. Students who were participants in the 1959 or the 1961 summer programs had (a) fewer individuals in their group who held an office in a campus organization and the number of offices held by them was half as many, (b) fewer individuals in their group who rendered special services to their college or gave special performances in connection with college programs and activities, and the total number of services and performances rendered was smaller, and (c) had fewer individuals in their group who held part-time jobs and the total amount of time that they spent in part-time work was smaller.

Retention of Students

22. Ninety-two per cent of the 280 summer students entered one of the four colleges in September following the close of the summer session in which they participated.

23. Approximately the same percentage of summer school participants and nonparticipants, 68 and 69, respectively, have completed at least two years of college in one of the four colleges in which they enrolled.

24. Approximately the same percentage of summer school participants and nonparticipants, 44 and 42, respectively, are candidates for graduation from one of the four colleges in June of 1963.

Student Characteristics Related to Level of Achievement*

25. Students who were initially poorer readers (those with scores among the lower one-third of the group on the initial test) made significantly greater gains during the 1960 and 1961 periods of summer instruction than did students who were initially better readers (those with scores among the upper one-third of the group on the initial test); however, the students who were initially better readers appeared to have profited more from the summer instruction. Over the period including the school year following each of the summer sessions the mean gains of these students were significantly greater than those of nonparticipants with similar initial scores while the mean gains of the poorer readers were not significantly greater than those of nonparticipants with similar initial scores.

26. Students who were initially poorer in English expression (those with scores among the lower one-fifth of the group on the initial test) appeared to have profited no more or less from the instruction in English during the summer of 1960 than did students who were initially better in English expression (those with scores among the upper one-fifth of the group on the initial test). Over the period including the 1960-1961 school year the mean gain of the summer students with low initial scores was not significantly different from that of nonparticipants with similar scores and the mean gain of the summer students with high initial scores was not significantly different from that of nonparticipants with similar scores.

27. Students who were initially poorer in English expression appeared to have profited more from the instruction in English during the summer of 1961 than did fellow students who were initially better in English expression since, over the period including the 1961-1962 school year, the mean gain of the summer students with low initial scores was significantly greater than that of nonparticipants with similar scores and the mean gain of the summer students with higher initial scores was not significantly different from that of nonparticipants with similar scores.

28. Students who were initially poorer in mathematics (those with scores among the lower one-third of the group on the initial test) made significantly greater gains during the 1960 and 1961 periods of summer instruction than did students who were initially better in mathematics (those with scores among the upper one-third of the group on the initial test); however, whether or not this finding indicates that the summer

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*Data based on 1960 and 1961 students only.

program was more effective with the students who were initially poorer in mathematics cannot be determined because of the small number of cases for which appropriate data were available.

29. Students with the better home backgrounds (those with scores among the upper one-third on the social environment questionnaire) showed a slight but consistent tendency to make higher scores on the initial tests of reading, English, and mathematics.

30. Students, both summer school participants and nonparticipants, with the poorer home backgrounds (those with scores among the lower one-third on the social environment questionnaire) showed a slight but consistent tendency to achieve higher grade-point averages at mid-first, end of first, and end of second semester of their freshman year of college. Because this negative relationship between level of achievement and quality of home background holds for both summer school participants and nonparticipants, the summer program cannot be considered among possible causal factors.

Implications of This Study

The following implications are based on experiences with this study:

1. Marked improvement in basic skills of reading, written expression, and mathematics can accrue as a result of a short period of intensive instruction in a learning situation in which the following conditions prevail: the content of instruction permits exposure to a limited range of fundamentals selected on the basis of comprehensive diagnosis and evaluation of students and organized into a meaningful sequential pattern; the methods of instruction are suited to the readiness of the student; the teachers are skilled in teaching and interested in the student as a person; the staff, material resources, and arrangements needed to facilitate the demands of the instructional program are operative; and the extra-class programs and other activities that can compete for the student's attention are managed in a way that does not undermine success in the academic program.

2. The involvement of the total staff in every stage of planning and execution of the educational program promotes allegiance to purposes, initiative and creative leadership, systematic preparation for teaching, and sustained efforts at evaluation and improvement of teaching.

3. Students respond to school work with uncommonly strong motivation and effort when they perceive their teachers as persons who know their subject, who excel in teaching, who like teaching, who expect of them maximum achievement, who show interest in them, and who respect their fellow-teachers. Further, students take increasing responsibility for their own improvement when, in the context of an accepting and supporting atmosphere, they are made aware of their specific strengths and weaknesses at the outset of the instructional program and they are given periodic detailed evaluations of their work during the course of instruction.

4. Students from deprived socio-cultural environments can be expected to succeed in these colleges, despite unimpressive high school transcripts and low test scores, if they are given a chance to recover from the educational debilitating experiences that may have operated earlier. Special programs of guidance and instruction may be needed for varying lengths of time. Traditional teaching procedures may not be appropriate for these students, especially in their initial exposure to the college curriculum.

5. Freshmen with relatively superior socio-cultural backgrounds and academic aptitude may not be challenged to exert their best efforts by the educational programs of these colleges. Special programs of guidance and instruction may be needed for these students from the outset of their freshman year.

6. A large proportion of students who have the potential ability to complete college successfully will leave college. Guidance programs should identify these students and direct efforts, where feasible, toward helping them complete their college work.

7. Among freshmen in these colleges there is a need for help in how to study. Instruction in general methods of study as well as in methods of study specific to content areas may be needed for these students.

8. Efforts should be made to discover conditions that foster the development of increasingly negative attitudes toward school on the part of freshmen in these colleges and to determine the nature of relationships among attitudes toward school, personal-social adjustment and academic achievement.

9. Experiences that provide opportunity for high school and college teachers to share in teaching college-bound high school students and/or college freshmen may enhance these teachers' understanding of mutual problems and improve their teaching. A further outcome of these experiences may be an easing of the transition of students from high school to college.

10. Instruction in reading and in English may be reinforced through cooperative planning and teaching by teachers of the two subjects. This approach seems to have special merit for working with students deficient in verbal abilities and skills.

V. EVALUATIVE COMMENTS FROM MEMBERS OF THE STAFF

Excerpts from evaluative reports prepared by the General Director, from evaluative reports prepared by the teachers, and from letters written by teacher assistants are presented below. These provide a sample of the reactions of members of the staff to the summer programs.

From Reading Teachers' Mid-term Report, July, 1959

It is generally felt that the reading phase of the CBSS program has to some degree equipped the students with basic reading skills. There skills, we feel, will enable the students to cope effectively with problems they will encounter as college students.

From English Teachers' Mid-term Report, July, 1959

1. Most of the students have made considerable--even gratifying --improvement in composing. (Some have done excellent work and are definitely college material in this area).

2. But those students who came to us weak in language minimals are still making errors, principally in spelling, punctuation, agreement, and diction. However, the phenomenon is not a hopeless one, and there is evidence of improvement - though, understandably, slow.

From Mathematics Teachers' Report, August, 1959

Our over-all view of the program is that the initial stages of the experiment were very good. Someone needs to be commended for the selection of the entire personnel. It was an excellent group with which to work. We sincerely hope that the experiment can run its course and that the next phase can profit from experiences of the first.

From General Coordinator's Report, August, 1959

However, there was more to the summer program than teaching and testing. As many educators know, success in these two areas is heavily contingent on a melange of intangibles. For instance, the instructors have to "feel right" about what they are teaching, about whom they are teaching, and about where they are teaching. Although this "feeling" is not susceptible to any scientifically exact statistical evaluation, we know that each teacher must have it to ensure a successful instructional program. Indeed, this "feeling" is a sine qua non for good teaching. Similarly, effective learning is definitely linked with student attitudes and feelings toward what they (the students) are learning, who is teaching them, and where and in what environment they are being taught. There must be an atmosphere that promotes and stimulates learning, and a general setting that encourages the spirit of intellectual inquiry. Students must have intellectual respect for their teachers and social respect for themselves and for each other. In this area, then, we are dealing with such intangibles as self-trust, belief, and faith which are the moral underpinnings of any good learning situation.

An attempt has been made to assess student attitudes and feelings, and the results of this study are summarized in...this report. But this summary does not tell the whole story. For instance, there were two religious services conducted by students for students. Students read the scripture; a student choir rendered a number of impressively sung spirituals; a student offered prayer. As an experiment in voluntary participation, attendance at the first religious exercise was not required. The results were encouraging; seventy-two students out of ninety voluntarily attended the worship service. The student choir of fifteen voices gained enough of a reputation during the eight-week program to be invited to sing in one of the local churches. Moreover, the program boasted several social activities--two dances, a picnic and sports festival, a talent show. Students participated in planning for all of these activities, and the staff felt that in encouraging such participation they were helping to furnish the proper atmosphere for effective learning.

This Report contains no summary of teacher attitudes and feelings; therefore, some extended comment on this aspect of the summer program is pertinent here. The first observation to be made is that the instructors who were to teach in the program were given the opportunity to structure the program. This was done in a series of meetings in late April and throughout May. Therefore, the instructional program reflected the collective thinking of the teaching staff. The Spring meetings were themselves experiments in group work--experiments in the time-consuming task of arriving at majority consensus on academic goals, methods, and procedures. Each teacher who participated in the fashioning of the academic and social design for the summer had a first-hand experience with democracy in action and learned something about the discipline necessary for group thinking and planning.

As a consequence, in June when the program began, teacher morale was high; and it remained high throughout the program. Evidence of high morale was the support given to phases of the program which were ancillary to the basic academic operation. Teachers returned to the campus voluntarily to attend book reviews, chaperone social dances, attend religious services. Teachers volunteered for extra assignments with the Supervised Study Program. Teachers voluntarily set up extra-hour conference periods. There was no indifferent teaching, and the enthusiasm with which each teacher went about his duties and responsibilities kindled a similar enthusiasm in the students. In a sense, then, the teaching program was conducted under optimum conditions, psychologically speaking. There were abundant opportunities for teachers to display their pedagogical skills, to engage in wise improvisation and experimentation. They experienced, in some instances for the first time, a type of professional self-realization which unfortunately is very rare in collegiate education.

The teachers themselves offered personal testimony regarding their enthusiastic reaction to the summer's experience. All, when questioned, thought that the program was eminently worthwhile and of worthy imitation and repetition. All expressed the desire to be considered for reappointment in the 1960 session. All agreed that in terms of student attitude and academic tone and atmosphere the summer's experience was uniquely gratifying and inspiring. All felt that the concentration on improving reading skills on the pre-freshman level was a highly commendable academic innovation, particularly for students with culturally impoverished backgrounds. All liked the conditions under which they were asked to teach--the low student load (fifteen students per reading teacher, thirty students per mathematics and English teacher), the opportunity for broad experimentation in teaching methods and procedures, and the opportunity for democratic participation in program planning.

For these reasons, staff esprit de corps remained high throughout the summer's program. It was indeed a gratifying academic experience for teacher and student alike.

From Recreation Supervisor's Report, August, 1960

The program for 1960 was conducted on a co-recreational basis and proved to be much more successful than the program of 1959. The attendance was greatly increased especially among the girls in the program. There seemed to be more enthusiasm and interest displayed and greater participation in more activities than the previous year.

Only one complaint was received from the students. This complaint came from some of the girls who were not permitted to wear play clothes to the activity while others were allowed to wear such clothing.

From Mathematics Teachers' Report, August, 1960

Several situations occurred during the program that indicated significant learning situations.

1. Students in one of the average sections solved this problem:

   Three consecutive even integers are such that the sum
   of the two largest is 6 greater than twice the smallest.
   What are the integers?

   A discussion about the solution took place in class.

One student: My solution came out zero equals zero.

Second student: So did mine.

Third student: I tried 2, 4, and 6. They satisfied the equation.

Several students had tried different combinations and all satisfied the equation.

Next student: I concluded that any three consecutive even integers would satisfy the equation.

Teacher: Why did you draw such conclusion?

Same student: Because all that I tried satisfied.

Teacher: How many know what an identity is?

No one knew. The teacher suggested that they try three consecutive odd integers--any three. Several reported that their set satisfied the original equation. The class concluded that the equation was satisfied for all values of the unknown. The class had proven that an identity was formed even though they had had no previous experiences with identities ---- a significant learning experience.

2. One student was asked to do the following problem:

Two squares have sides differing by 4 inches. If their areas differ by 88 sq. in., what are the lengths of their sides?

She asked several questions about the approach, all of which were answered by lead questions.

Student: Is just one side of the square 4 inches longer or is each of the sides 4 inches longer?

Teacher: Do you know the definition of a square?

Student: Oh! Oh! I know!

She then went on and worked the problem. When she had finished, there was another question.

Student: Is that correct?

Teacher: Suppose you check the problem and tell me if it is correct.

When she had checked and found that her problem was correct, she was bubbling over with joy. So much so that a consultant, who happened to be visiting with us, remarked--"She is happy all over."

The student's part as an active participant seldom fails to add zest to his work and to give him a more complete mastery of what he has learned. The fact that he had been guided toward his discoveries by the helpful and stimulating questions of the teacher will not detract from his justifiable pride in his achievement.

From English Teachers' Report, August, 1960

To begin with, the assumptions of the Department were not incorrect. A very large majority of the students revealed not only ignorance of the basic principles of grammar, mechanics, and sentence structure but awkwardness (if not inability) to express themselves clearly, correctly, fluently, impressively. A very conspicuous few may be excused from this charge. However, despite this initial handicap and wholesale deficiency, there was general improvement in performance. But for many, this improvement was in terms of moving from points below zero to those approaching zero --- if a thermometer may be used as a point of analogy. For some, the improvement was from zero to 30 above --- still, however, in the freezing zone. A precious few thawed out and reached as high as 85 degree

On the whole, then the effort was not in vain. There was movement in the positive direction. And a most important thing happened: almost without exception, a gusto for learning, for filling the gaps was everywhere in evidence. When it becomes typical of a group of students to ask for more and more work, to be not only punctual and regular but desirous of staying overtime at clinics --- even when the temperature zooms into the 90's --- then one realizes an exciting transformation has taken place in our fun-loving teen-agers.

From a Teacher Assistant's Letter to the General Coordinator, August, 1960

It is with pleasure that I answer your request for a statement evaluating the effective results of my participation in the Cooperative Experimental Summer School, 1960.

My experiences in the program were not only enjoyable, informative and inspiring, but also rewarding.

I can say, without a doubt, that I am a much better teacher because of the knowledge gained of the strengths and weaknesses of our students when they have to compete with students who come from so wide a range of schools and places.

Acquaintance with the subject matter needs of the students, with the materials and techniques for improving reading; and a better understanding of the factors which enter into the reading process have motivated me to try to do something to help improve the reading at Howard High School.

Both last year and this year two classes in reading have been scheduled. One class is composed of eleventh and twelfth grade students and the other of lower grade students. These classes are small and do not begin to take care of the many poor readers at Howard.

We are grateful for this beginning and hopeful that more will be done in the future.

In addition to the purchase of books, and such magazines as Reader's Digest, Educational Division, and Practical English which has a large section devoted to vocabulary development and a developmental reading section, Howard has purchased a basic Language Laboratory consisting of three phonographs, three jack boxes and eighteen ear phones which can be used effectively with the reading program, although this small portable laboratory belongs to the Language Arts Department.

The school, itself, has a well equipped audio-visual department which may serve the reading classes.

There is need, however, for more audio-visual aids which pertain to reading particularly.

I believe that the Cooperative Experimental Summer School has served a worthy purpose and that the results which can not be seen and expressed, far exceed the ones which can be seen and expressed.

Thank you for providing me the opportunity of participating in the 1960 Cooperative Summer School.

From General Coordinator's Report, August, 1960

It may also be happily reported that those features of the 1959 program deemed to be most academically palatable and pedagogically stimulating were again in abundant evidence in the 1960 program. Again, teachers, hardened to the low-pulsed motivation of regular-year students, were themselves excited by the zeal with which even the average CESS student attacked his assignments, attended his conferences, and lived up to his academic commitments. Once again, the program seemed to reflect an almost ideal integration of the academic, the social, the cultural, and the religious. Zestful participation seemed to be the keynote for the entire summer's series of activities. Students participated zestfully in planning and conducting their weekly religious services. The choir, under student direction, practiced faithfully and sang both competently and enthusiastically. The zeal with which student participants practiced for their talent show kept the Coordinator busy making arrangements for practice sessions, and the final product -- the Talent Show itself -- was eminently successful and reflected the careful planning and hard work that students had put into it.

A consistently large number of students attended the daily recreation sessions in the Morehouse Gymnasium, and participated in the swimming, bowling, and basketball playing sponsored there by the recreation staff. And during the question period at the Book Reviews sponsored by the School of Library Services of Atlanta University, CESS students invariably arose to ask questions which reflected their interest and involvement in this important peripheral activity in the CESS program.

Any evaluative comment on the 1960 CESS program must include a word of high commendation to the members of the CESS teaching staff.

They attended the planning sessions faithfully, lived up to their academic commitments diligently and punctually, and applied themselves to their respective teaching tasks with an almost euphoric zeal.

From English Teachers' Report, August, 1961

Eight weeks is too short a period to eliminate all of the problems and speech patterns which have been a part of the behavior of students for 16 and 17 years. However, the staff by placing emphasis on certain matters made students aware of the need to develop skills for competent communication.

Through frequent writing, revising, and rewriting students developed some fluency, a sense of structure, and an awareness of the relationship between mechanics and thought.

For many, the excitement of the program lay in the discovery of potentials which had never been tested.

Implications

The English staff at the end of the experiment agreed upon the following implications:

1. That there should be a closer relationship between college and high school teachers. College teachers can apprise the high school of what college expects of entering freshmen; high school teachers can inform the college of what they can and cannot do under present circumstances. As a result, the college can more intelligently meet the needs of freshmen, preparing to take them where the college expects to find them, on one hand, and helping the high school to prepare the student for college, on the other hand.

2. That there is much of value to be explored and developed in team teaching. Much of the success in the English and Reading Program was due to the close working and planning

relationship between the Reading and English teachers, assisted by the assistant working between the teachers, with the same students, and in the two areas. A major value results from the exchange of experiences, understandings, and evaluations by people who have seen students from various angles.

3. That small classes or teacher loads contribute to maximum growth. Students learn to write through writing, not through talking about writing; through having their writing evaluated; and through being shown how to improve and to revise. The teacher should be able to read and appraise each piece of writing carefully, to write encouraging remarks where there is something of worth and should not leave the student discouraged from efforts so important to him. A reasonable class load makes possible frequent conferences which promote this maximum growth.

4. That through the program, teachers gained insights into the most popular types of difficulties among high school students who are not below normal -- the average and above average. This has functional value in determining points of emphasis in freshman courses in these areas. This has significance also in the area of teacher training in that those students preparing to teach in high schools may be made aware of phases of neglect at the present time.

From Teacher Assistant's Letter, August, 1961

The experiences that I had as an assistant in the 1961 CESS were rich, challenging, and enlightening. Rich because I was afforded the opportunity to work along with persons of the college community; challenging because here I was faced with students who had potential but had not developed to the norm of expectancy; and enlightening because I was able to more definitely direct my teaching in my regular classes, having seen exactly what the college teachers looked for in these CESS students.

Certainly this summer of cooperative planning and teaching was of tremendous benefit to everyone who was a part of it. If for no other reason, it was good because it focused attention on the necessity of cooperatively concerted efforts on the parts of secondary and college teachers and administrators.

From Teacher Assistant's Letter, August, 1961

I do feel that, as a result of my participation in the Cooperative Experimental Summer School program, I have become a better teacher. The program gave me a definite new approach to my work.

Unfortunately, a reading-English program was not organized. However, my principal did give me permission to carry out in my classes the new ideas that I had received. By means of a subscription for thirty-eight copies of the Reader's Digest-paid for by the school-reference materials, newspapers, and mimeographed materials, I was able to carry out a reading-English program.

The twelfth grade students were greatly benefited. Many of them said that the college entrance examination was easier to them because of their experiences in the English Class. I expect much more from the present twelfth graders who had the course last year.

I do hope that we shall be able to have a reading program. The other teachers who have tried the same method feel the same as I do.

I shall always be grateful for the opportunity I had to participate in the CESS program.

From General Coordinator's Report, May, 1961

As to the carry-over value of the English-Reading team approach, it is not possible at this time to make a scientifically accurate assessment of the teaching procedure in freshman composition and reading on all four campuses. In the first place, there are healthy differences in instructional approaches among the four colleges. In one institution, English and reading are joined in one department; in another they are separated in both philosophy and function. On yet another campus, one English teacher and one Reading teacher cooperate splendidly in what may be termed a modest beginning in the use of a team approach, while the rest of the English and Reading teachers move in sharply differentiated academic orbits. Such diversity in instructional methods and approaches is healthily natural in a University Center; but it is hoped that beginnings will be made in at least one institution to effect a firm team approach in English and Reading in which programs will be coordinated, syllabi jointly prepared, and common reading lists used. Certainly, because of the Cooperative Experimental program, the colleges in the Center are closer to that eventuality than ever before.

Pre-freshman mathematics will also stimulate accelerated mathematics programs and advanced mathematics placement in the Center. Already, in one institution a special advanced section in Analysis has been organized for freshmen. With freshmen advanced to the 15th and 16th grade levels in mathematical ability, there is a definite opportunity to organize honors sections for future Mathematics, Chemistry, and Biology majors.

For mathematics is the crucial science. Science offerings are enriched in proportion to the success of instruction in mathematics. The pre-freshman program in mathematics provides a means to do more with our students in the sciences and expect more from our students in the sciences.

APPENDIXES

Appendix A

Summary of Responses to Selected Items of the Questionnaire on Home Background

A. Median number of years of schooling completed by members of the family.

	Group	
	1960	1961
Father	11.71	11.32
Mother	12.04	12.59
Sibling with most schooling	13.64	13.07
Uncle or aunt with most schooling	15.81	15.98

B. Percentage of parents or guardians with given occupational status.

	Group			
	1960		1961	
	Father	Mother	Father	Mother
Professional and managerial	32	41	26	33
Clerical and Sales	7	9	8	13
Service	17	35	15	43
Agricultural, fishery, forestry and kindred			4	
Skilled	26	9	18	10
Semi-skilled	11	4	23	
Unskilled	7	2	5	2

C. Percentage of parents or guardians with given reading habits.

	Group			
	1960		1961	
	Father	Mother	Father	Mother
1. Reads a new book:				
Every month or more frequently	13	19	12	16
Every 2 or 3 months	17	29	10	22
Every 6 months	8	11	6	12
Every year	8	2	7	10
Rarely ever	43	34	47	38
(No answer)	11	4	19	3

2. Reads a magazine

Frequently and regularly	45	60	24	49
Occasionally, but not regularly	20	34	36	42
Only by choice	10	2	10	0
Hardly enough to say she (he) does	15	3	14	7
No answer	10	1	17	2

3. Reads a newspaper

Everyday, spends a great deal of time with it	61	60	52	53
Everyday, doesn't spend a great deal of time with it	17	35	16	35
Occasionally	8	4	10	7
Seldom	1		1	1
Only when she (he) has to read it	4		2	1
Obtain information				
No response	9	1	18	2

D. Percentage of participants who with their parents have set their educational goals at the specified or equivalent levels.

	1960	1961
1. Bachelor's degree	31	31
2. Master's degree	42	42
3. Doctor's degree	27	37

E. Percentage of parents who are living

	1960	1961
Both	84	83
Father only	4	7
Mother only	8	7
Neither	3	3

F. Percentage of parents who are living together

1960	1961
74	64

G. Percentage of parents who own or are buying or renting house.

	1960	1961
Own	38	42
Buying	36	30
Renting	26	28

H. Percentage of houses with given equipment.

	1960	1961
No TV	4	6
One TV	78	77
Two or more TV's	18	17
One radio	29	32
Two or more radios	71	68
Book collection other than textbooks	89	92
No book collection other than textbooks	11	8

I. Percentage of students who have visited certain industries and agencies in their home towns and/or in other communities.

	1960		1961	
	Home Town	Other Com.	Home Town	Other Com.
Art exhibition	61	52	77	57
Art Museum	38	48	51	56
Church concert	83	53	87	62
Forum and public discussion	67	49	67	54
Gardens	43	48	50	52
Historical and/or Natural Museums	43	69	44	55
Natural sites; mountains, falls, etc.	62	82	64	82
Outstanding buildings	71	87	72	73
Public Library	91	68	94	61
Parks	87	86	90	82
Theatre				
Concert	66	51	64	59
Live plays	82	68	81	64
Movies	94	93	95	81
Opera	31	28	39	72
YMCA YWCA	79	59	81	53
Zoo	74	73	78	68

Appendix B
Instruments and Materials for the Reading Program

Diagnostic Instruments:

1. Audiometer is used to screen students for possible auditory difficulty.

2. Keystone Telebinocular Visual Survey is a screening device for possible visual difficulties.

3. The Reading Eye Camera is an instrument which photographs precisely eye-movement activity such as: (1) the number of fixations per passage, (2) duration of fixation, (3) number of regressions, (4) the rhythmic pattern of individual reading, and (5) eye span. A comprehension check is made after the making of each photographic record.

Instructional Instruments:

1. Opaque Projector - an instrument used to project on a screen materials for demonstration purposes which are not available to each individual in the class.

2. Controlled Reader - a training instrument which aids students in increasing their rate of comprehension and rate of reading.

3. Reading Accelerators - (various types) - are electrically or manually controlled machines used to develop and improve reading habits by increasing eye span, to increase reading rate and eliminate undersirable reading habits.

4. Filmstrip Projector

5. Tape Recorder

6. Motion Picture Projector

Appendix C
Syllabus for Reading Classes

I. ORIENTATION

Wednesday, June 21 - Friday, June 23

Points of Emphasis

1. General introduction to the work in reading

2. Securing background information, checking of reading and study habits and engaging in further testing
   (Suggest to students that they bring definitions of reading to the next class session)

3. Explanation of the reading process
   a. Definitions of reading
   b. Reading as a meaningful experience
   c. Reading as a thinking process
   d. Reading as related to listening
   e. How the eyes behave when we read
   f. Some visual difficulties which may or may not affect reading
   g. Causes of reading disability

Monday, June 26 - Wednesday, June 28

4. Introduction to good study habits
   a. Planning for study
   b. Developing appropriate attitudes toward study
   c. Providing a climate for study
      (1) Reading room
      (2) Library
   d. Scheduling time
   e. Developing study techniques (Study methods--SQ3R, PDRST, Mastery Method, Note-taking)
      (1) Textbook reading
         (a) Organization of textbooks (title, author and publishers; preface; table of contents; chapter headings; summaries and discussion questions; bibliography; footnotes; index; appendices; and glossary)
         (b) Typographical aids (titles and subheads; key words as indicated by boldface type, italics or underlining)
   f. Following directions
   g. Improving concentration
   h. Organizing systematic review

Thursday, June 29

5. General comments and instructions concerning voluntary reading
   a. Identification of major areas in which voluntary reading should be done
      (1) Special types of literature
      (2) Reading for effective living
      (3) Natural science
      (4) Social science
   b. Discussion of reasons why voluntary reading is an important and vital habit
   c. Materials available for voluntary reading
      (1) Intensive and extensive
      (2) General enrichment
      (3) Recreational reading
   d. Varying rates of reading; introduction of My Reading Design

Suggested References

How To Become A Better Reader, Chapters 1-5
How To Improve Your Reading, Lesson 3
Reading Skills, (Baker) Chapters 1-4, 7, 9, 11, 14, and 15
Following Printed Trails, Problems 1, 2, 9, 10, and 11
Problems in Reading and Thinking
The Improvement of College Reading, Chapter 13
Study Type Exercises, Chapters 2, 3, 14 and 17
Streamline Your Reading, (Life Adjustment Series)
How To Study - Botel & Preston; Chapters 1, 2, 3, 5, and 6
Study Your Way Through School, (Life Adjustment Series)
How To Study - Morgan & Deese - Chapters 1, 2, and 3
Student's Guide To Efficient Study
The Techniques of Reading, Chapters 2, 10, 11 and 13
Read Faster and Get More From Your Reading, Chapters 4, 5, and 8

II. INTRODUCTION TO VOCABULARY BUILDING AND ENRICHMENT

(To be stressed throughout session)

Friday, June 30

Points of Emphasis

1. Four types of vocabulary -- reading, writing, speaking and listening

2. The value of each type

3. Various methods of building vocabulary
   a. Through reading
   b. Through systematic study of words

    (1) Word derivation
    (2) Word attack skills
  c. Through listening
  d. By use of the dictionary

Suggested References

Reading Skills, Chapter 14
Word Wealth (New Edition) Introductory Chapter, "Adventure With Words"
How To Enlarge and Improve Your Vocabulary, Chapters 1-4 as well as the entire book
Effective Reading and Learning, Chapter 5
Study Type Reading Exercises, Chapter 12

Suggested Practice Materials

Efficient Reading (blue cover) Selections 49-54
Efficient Reading (red cover) Selections 49-54
Toward Reading Comprehension, Chapter 3
Techniques of Reading, Chapter 3
Reading and Vocabulary Development
Word Building
Words: How To Know Them
Effective Reading and Learning, Chapters 5-8 and Vocabulary checklist, pp. 379-423
How To Become a Better Reader, Chapters 14 and 15
Reader's Digest
Words in Context

III. PARAGRAPH READING

Monday, July 3 - Friday, July 14

Points of Emphasis

1. Paragraph patterns
   - a. Understanding relationships among sentences
   - b. Seeing the authors pattern of thought
   - c. Visualizing the structure of paragraphs

2. Finding main ideas and identifying key words and concepts
   - a. How and where to find main ideas
   - b. Function of key words and concepts in relation to main ideas
     - (1) Typographical cues
     - (2) Full signals
     - (3) Half signals
   - c. The importance of finding ideas in all type of materials

3. Relating details and organizing what is read
   - a. Functions of details
   - b. Relationship of details to main ideas

c. Outlining to organize main ideas and details

4. Relating paragraph reading to some content fields

Suggested References

Breaking the Reading Barrier, pp. 46, 47, 77, 96, 97 and 144
Study Type of Reading Exercises, pp. 29-34 and 39-44
How To Study, pp. 35-39
How To Become A Better Reader, Lesson 9 and 10
How To Improve Your Reading, Lesson 5 and 6
Read Faster and Get More From Your Reading, pp. 50-55
Effective Reading and Learning, Chapters 3 and 4
The Art of Efficient Reading, Chapters 12-16
The Techniques of Reading, Chapters 17 and 18

Suggested Practice Materials

Reading for Meaning, with appropriate grade levels
Basic Reading Skills, pp. 7-16
Improvement of College Reading, Exercises 2, pp. 13-15. Other short selections
Approach to College Reading (Short Selections in both editions)
Efficient Reading (Short selections in both editions)
Following Printed Trails, Problems 3 and 4
Breaking the Reading Barrier, Exercises 1-13
Better Reading and Learning, Exercises 5, 6, 7, 8, 9, 10, and 11
Study Type of Reading Exercises, Supplementary exercises 4A, 4B, 5A, 5B and 5E
Better Work Habits, Units B, C, and D
A Manual of Reading Exercises for Freshmen, Chapter 3
Reading Skills, pp. 81-87
How to Read Science and Technology
A College Remedial Reader
Toward Better Reading Skills

IV. FOCUSING ON DIFFERENTIATED RATES OF READING AND EMPHASIS ON VOLUNTARY READING

Monday, July 17 - Friday, July 21

Points of Emphasis

1. Significance of varied rates of reading
   a. Slow, careful and thorough reading
   b. Reading at an average or moderate rate
   c. Quick reading of a selection
   d. Very rapid reading
   e. Skimming

2. Varied rates in relation to type of material and purpose for reading
   - a. Achieving a balance between speed and comprehension
   - b. Being able to "shift gears" within a selection

3. Ways of increasing rate
   - a. Heightening of one's level of concentration
   - b. Improvement of eye-movement patterns
   - c. Use of easy materials under timed conditions
   - d. Use of instruments or speeded-reading devices

Suggested References

Art of Efficient Reading, Chapters 7 and 8
The Techniques of Reading, Chapter 6
How To Become A Better Reader, Lessons 7 and 8
Following Printed Trails, Problems 5, 11 and 12
Reading Skills, Chapters 5 and 7
Effective Reading and Learning, Chapter 1

Suggested Practice Materials

Improving Reading Ability, Chapters 3-7
Toward Reading Comprehension, Chapter 2
Standard Test Lessons
The Reading Laboratory
The Improvement of College Reading, Rapid Reading and Skimming Sections
Power and Speed in Reading, Exercises on Speed of Perception, Comprehension and Interpretation

Selections from Reader's Digest
Various reading rate devices, such as tachistoscopic attachments, reading boards, controlled reader

V. READING CRITICALLY

Monday, July 24 - Friday, July 28

Points of Emphasis

1. Building background for evaluating what is read
   - a. Wide reading
   - b. Free and open mind

2. Developing a healthy skepticism toward the printed page

3. Differentiating between
   - a. Fact
   - b. Opinion

c. Propaganda

4. Reacting to what is read in
   a. Newspaper
   b. Books
   c. Magazines

Suggested References

The Techniques of Reading, Chapters 15 and 16
The Art of Efficient Reading, Chapters 5 and 6
How To Become A Better Reader, Lesson 11
How To Read A Newspaper, Chapters 10 and 11
How To Read Critically
Preface to Critical Reading
Efficient Reading, pp. 33-35.
Guide to Logical Thinking

Suggested Practice Materials

Improving Reading Ability, pp. 153-166
Reading Skills, pp. 69-80

VI. FINAL POINTS OF EMPHASIS

Monday, July 31 - Tuesday, August 8

1. Further integration of basic reading skills

2. Evaluation of the session
   a. Student-teacher evaluations
   b. Standardized and informal testing

Note: Focusing in individual needs will be the point of emphasis during the clinic hours.

Appendix D
Syllabus for English Course

The Course: A Developmental Approach to Writing and Reading

I. Orientation (June 21-27)

Unit A: Thinking about reading, writing, and college: June 21
Lesson: 1. Brief discussion of the course, the nature of reading and writing, and the demands of college.

2. An impromptu short theme based on an experience, or on a knowledge of something, or on a preference.

Assignment: For June 22, study Cerf's "It's Fun To Read," pp. 217-219. For June 26, carefully read Steffens' "Preparing for College," pp. 223-226 and write either your reaction to this article or a composition based on one of the "Suggestions for Themes," p. 230.

Unit B: Inspiration from reading: June 22
Lesson: 1. General discussion on the pleasures and power of reading.

2. Specific discussion of Cerf's "It's Fun To Read," pp. 217-219.

Assignment: For June 23, write a theme based on one of the suggestions listed on p. 222.

Unit C: Writing from inspiration: June 23
Lesson: Discussion of sample themes

Assignment: For June 26, carefully read Steffens' "Preparing for College," pp. 223-226 and hand in theme in reaction to this article or a theme based on one of the "Suggestions for Themes," p. 230. Also carefully study Fisher's "Theme Writing," pp. 231-233, for information and contents.

Unit C: (Continued) June 26
Lesson: Discussion on the contents and ideas in Fisher's "Theme Writing," pp. 231-233.

Assignment: For June 27, write a short theme on one of the "Suggestions for Themes," p. 238.

Unit C: (Continued) June 27
Lesson: Discussion of sample themes

Assignment: For June 28, master the contents of pp. 135-139 and pay particular attention to the material on p. 136.

II. Studying the word and building a vocabulary (June 28-July 5) (Clinical work for this block: Problems in parts of speech, idiomatic expressions, and agreement: Chapters 4, 6, 8, 9, 10, 11, 12, 26)

Unit A: Using the dictionary: June 28
Lesson:Discussion on the uses of the dictionary

Assignment: For June 29, carefully do exercises 1, 2, 3, 4, 7, 8 - pp. 141-142; 145. Be responsible for exercises 5, 6, 9, 10 - pp. 143-144; 146 - for clinic.

Unit A: (Continued) June 29
Lesson: Discussion of exercises 1, 2, 3, 4, 7, 8 - pp. 141-142; 145.

Assignment: For June 30, carefully study the contents of pp. 125-126 and do exercises 1-3, pp. 129-132. Be responsible for the "Review Test," pp. 133-134, for clinic.

Unit B: Using well-chosen words: June 30
Lesson: 1. Discussion on using well-chosen words, pp. 125-126.

2. Discussion on exercises 1-3, pp. 129-132.

Assignment: For July 3, study Twain's use of words in "Go To The Ant?," pp. 239-242; and do the exercises on pages 245-246. Be responsible for knowing Flescho's use of words in "It's your Language," pp. 247-250, and for doing the exercises on pp. 252-253, for clinic.

Unit B: (Continued), July 3
Lesson: Discussion of Twain's use of words in "Go To The Ant?," pp. 239-242, and of the exercises on pp. 245-246.

Assignment: For July 5, write a theme on one of the "Suggestions for Themes" on either p. 246 or on p. 253.

Unit B: (Continued), July 5

Lesson: A discussion of sample themes

Assignment: For July 6, study carefully the contents of pp. 11-15 and do exercises 1-4, pp. 17-20.

III. Studying the sentence and its elements (July 6-14) (Clinical work for this block: Continue study of problems in parts of speech, idiomatic expressions, and agreement; study problems in spelling (Chap. 25); study problems in sentence structure (Chapters 11, 13, 14, 15).

Unit A: Studying the elements of the sentence: July 6
Lesson: Discussion of the important sentence elements, together with exercises 1-4, pp. 17-20.

Assignment: For July 7, study and do exercises 5-9, pp. 20-24.

Unit A: (Continued), July 7
Lesson: Discussion of exercises 5-9, pp. 20-24

Assignment: For July 10, carefully study the contents of pp. 111-113, together with exercises 1-2, pp. 115-118. Be responsible for ex. 4 and "Review Test," pp. 121; 123-124, for clinic.

Unit B: Using good sentences and sentence variety: July 10
Lesson: Discussion on using good sentences, together with exercises 1-2, pp. 115-118.

Assignment: For July 11, carefully study Helena Kuo's "American Women Are Different," pp. 345-349, for use of good sentences and sentence variety.

Unit B: (Continued), July 11
Lesson: Discussion of sentence patterns in Kuo's "American Women Are Different," pp. 345-349.

Assignment: For July 12, carefully study Frank Sullivan's sentence patterns in "Let's Take A Few Wooden Nickels," pp. 255-259.

Unit B: (Continued), July 12
Lesson: Discussion of Sullivan's use of sentence patterns in "Let's Take a Few Wooden Nickels," pp. 255-259.

Assignment: For July 13, write a theme on one of the "Suggestions for Themes," pp. 262-352.

Unit B: (Continued), July 13
Lesson: Analysis of sample themes

Assignment: For July 14, carefully study David Shepard's use of sentence patterns and sense of organization in "Management in Search of Men," pp. 405-411.

Unit B: (Continued), July 14
Lesson: Analysis of the sentence pattern and organization of Shepard's "Management in Search of Men," pp. 405-411.

Assignment: For July 17, study the elements of the paragraph, pp. 147-150.

IV. Studying the structure and nature of the paragraph (July 17-July 24) (Clinical work for this block: continue study of problems in spelling (Chap. 25); problems in sentence patterns (Chapters 11, 13, 14, 15); problems in punctuation (Chapter 20).

Unit A: Studying the topic sentence and other elements of the paragraph: July 17
Lesson: Discussion of the elements in the paragraph, pp. 147-150.

Assignment: For July 18, study Cerf's use and development of the topic sentence in "It's Fund To Read," pp. 217-219.

Unit A: (Continued), July 18
Lesson: Analysis of Cerf's use and development of the topic sentence in "It's Fun To Read," pp. 217-219.

Assignment: For July 19, carefully study DeemsTaylor's use of the topic sentence and supporting material in "The Monster," pp. 267-270.

Unit B: Studying and using supporting material: July 19
Lesson: Analysis of Taylor's use of the topic sentence and supporting material in "The Monster," pp. 267-270.

Assignment: For July 20, write a theme on one of the "Suggestions for Themes," on pp. 273; 344; 372.

Unit B: (Continued), July 20
Lesson: Analysis of sample themes for use of the topic sentence and supporting material.

Assignment: For July 21, carefully analyze Ruth Benedict's paragraph structure and use of supporting material in "Anthropology," pp. 337-339.

Unit B: (Continued), July 21
Lesson: Analysis of paragraph structure and supporting material in Benedict's "Anthropology," pp. 337-339.

Assignment: For July 24, write a theme on one of the "Suggestions for Themes," on pp. 273, 344; 372.

Unit B: (Continued), July 24
Lesson: Analysis of sample themes for paragraph structure and supporting material.

Assignment: For July 25, carefully study information on outlining, pp. 3-6.

V. Studying and Writing the whole composition (July 25-August 9) (Clinical work for this block: continue study of problems in spelling (Chap. 25), problems in diction (Chaps. 17 and 26), problems in punctuation (Chaps. 20, 21, and 23).

Unit A: Studying the mechanics of outlining: July 25
Lesson: 1. Discussion of the mechanics of outlining pp. 3-6.

2. Discussion of approved steps in making an outline, pp. 3-6.

Assignment: For July 26, follow the directions of exercise 1, p. 7.

Unit A: (Continued), July 26
Lesson: Analysis of sample outlines

Assignment: For July 27, carefully study the outline organization of E. M. Forster's "My Wood," pp. 275-278 and do the exercises on pp. 280-282.

Unit A: (Continued), July 27
Lesson: Analysis of the organization of Forster's "My Wood," pp. 275-278; a discussion of the exercises on pp. 280-282.

Assignment: For July 28, carefully analyze John Muir's "A Windstorm in the Forest," pp. 293-298, for structure and organization; also do exercises on pp. 301-302.

Unit B: Outlining reading material: July 28
Lesson: Analysis of the structure and organization of Muir's "A Windstorm in the Forest," pp. 293-298, a discussion of the exercises on pp. 301-302.

Assignment: For July 31, outline Francis Parkman's "The Chase," pp. 373-374: be able to analyze its structural pattern; do the exercise on p. 377.

Unit B: (Continued), July 31
Lesson: 1. Analysis of sample outlines of Parkman's "The Chase," pp. 373-374.

2. Discussion of the structural pattern of the article.

3. Discussion of the exercise on p. 377.

Assignment: For August 1, re-study Parkman (373-374), Muir (293-298), Forster (275-278) for controlling idea and for use of transitions.

Unit C: Learning to write from an outline: August 1
Lesson: Analysis of the controlling idea and use of transitions in Parkman (373-374), Muir (293-298), and Forster (275-278).

Assignment: For August 2, write a theme on one of the "Suggestions for Themes," pp. 282; 303; 378; employ good structure, apt transition, and well-chosen words.

Unit C: (Continued), August 2
Lesson: Analysis of sample themes

Assignment: For August 3, extend knowledge of transitions and recognition of the controlling idea by carefully studying Lincoln Steffen's "Preparing for College," pp. 223-226.

Unit C: (Continued), August 3
Lesson: Further discussion of transitions, controlling idea, and structure with special reference to Steffens' "Preparing for College," pp. 223-226.

Assignment: For August 4, study Silman and Lear's "Boswell of the Microbes," pp. 283-290, with special attention to its introduction and conclusion.

Unit D: Studying the introduction and conclusion: August 4
Lesson: Analysis of Silman and Lear's "Boswell of the Microbes," pp. 283-290, with special reference to its introduction and conclusion.

Assignment: For August 7, write a theme based on one of the "Suggestions for Themes," p. 292; employ effective introduction, conclusion, supporting material, organization, transitions, well-chosen words, and controlling ideas.

Unit D: (Continued), August 7
Lesson: Analysis of sample themes with respect to the effectiveness of the controlling idea, supporting material, organization, and style.

Assignment: For August 8, write an analysis of Oliver La Farge's "The Art of Discontent," pp. 417-422, with respect to the effectiveness of its controlling idea, supporting material, organization, and style.

Unit D: (Continued), August 8
Lesson: Discussion on sample analysis of La Farge's "The Art of Discontent," pp. 417-422.

Assignment: For August 9, further discussion of sample analysis of La Farge's "The Art of Discontent," pp. 417-422.

Unit D: (Continued), August 9
Lesson:
1. Discussion of La Farge's "The Art of Discontent," pp. 417-422.
2. Discussion on additional sample analyses of La Farge.

Requirements.

1. Textbook:

   Griggs, Bludworth, and Llewellyn. Basic Writer and Reader. New York: American Book Company, 1961.

2. Webster's New Collegiate Dictionary

3. Themes:

   At least one weekly outside theme.

4. Conference and clinic:

   Each student, according to need, is to confer with his teacher at least once in each week for additional work, for help, or for personal evaluation, encouragement, and guidance.

Appendix B
Outline of Basic Course of Mathematics Program

Arithmetic

I. Number Systems

  A. Natural numbers - Base 10

  B. Other systems - Base other than 10

    (1) Positive and negative integers

    (2) Positive and negative fractions

    (3) Irrational numbers

    (4) Complex numbers

II. Operations With Natural Numbers

  A. The Associative Law for addition and multiplication

  B. The Commutative Law for addition and multiplication

  C. The Distributive Law of addition with respect to multiplication

III. Operation With Systems of Numbers Other Than The System of Natural Numbers

IV. Approximate Numbers

  A. Rounding Off

  B. Margin of error

  C. Irrational numbers

    (1) Square root by approximation

  D. Logarithms

  E. Slide rule

V. Verbal Reasoning Through Worded Problems

Algebra (Extension of Arithmetic)

I. Operations Upon Polynomials and Rational Algebraic Functions

II. Graphs of Linear Functions

III. Solutions of Linear and Quadratic Equations in One Unknown

IV. Reading Comprehension of Verbal Problems

Geometry

I. Fundamental Axioms and Postulates

II. Deductive Method of Reasoning Versus Inductive Method of Reasoning

III. Theorems

  A. Selection of hypotheses and conclusions

  B. Methods of proofs

IV. Geometry Around Us - (Geometry in Everyday Life)

V. Reading Comprehension of Verbal Problems

Appendix F
The Saturday Morning Schedule

Saturday, June 27, 1959

9:00 - 10:00 A.M.: Students evaluate the program to date.

10:00 - 11:00 A.M.: Mr. Baldwin Burroughs, Director of Atlanta University Summer Theater discusses the dramatic technique of Miss Agatha Christie.

11:00 - 12:00 Noon: Mrs. Esta Seaton, Department of English, Spelman College, and Mr. Richard K. Barksdale, Department of English, Morehouse College, discuss Crane's *Red Badge of Courage*.

Saturday, July 11, 1959

9:00 - 10:00 A.M.: Special-Help English Clinics

10:00 - 11:00 A.M.: Dean A. A. McPheeters, Clark College, and Dean P. E. Wilson, Morris Brown College, discuss the "Qualities Needed for Success in College."

11:00 - 12:00 Noon: President Benjamin E. Mays, Morehouse College, talks on "The Challenge of the Difficult."

Saturday, July 25, 1959

9:00 - 10:30 A.M.: Mr. G. L. Chandler, C.E.S.S. English teacher, introduces students to the Syntopical Series in the Morehouse College Reading Room.

10:30 - 12:00 Noon: Dr. Helen Coulbourn, Department of English, Atlanta University, discusses "The Origin of Grammar."

Saturday, August 1, 1959

9:00 - 12:00 Noon: The students discuss the program.

Appendix G
Daily Schedules

Summer 1959

Breakfast - 6:30

Reading
(six sections to run
concurrently) - 7:30 - 8:50

READING CLINIC: The following Sections are scheduled Monday-Friday.

Section A - 10:00 - 11:00

Section B - 10:00 - 11:00

Section C 9:00 - 10:00

Section D 10:00 - 11:00

Section E 9:00 - 10:00

Section F 9:00 - 10:00

ENGLISH COMPOSITION

Section A - 9:00 - 9:50

Section B - 9:00 - 9:50

Section C - 9:00 - 9:50

Section D - 10:00 - 10:50

Section E - 10:00 - 10:50

Section F - 10:00 - 10:50

MATHEMATICS

Section A - 11:00 - 11:45

Section B - 11:45 - 12:30

Section C - 11:00 - 11:45

Section D - 11:45 - 12:30

Section E - 11:00 - 11:45

Section F - 11:45 - 12:30

ENGLISH CLINIC: All Sections Tuesday and Thursday, 1:30 - 2:30.

Conference Period - 1:30 - 3:30 Monday, Wednesday, Friday

Recreation - 3:30 - 5:30

Dinner - 5:30 - 6:00

Supervised Study - 7:00 -10:00

Summer 1960

Breakfast - 6:30

Classes in Reading (six sections to run concurrently) - 7:30 - 9:20

English (two sections)
Mathematics (two sections) - 9:30 - 10:20

English (two sections)
Mathematics (two sections) - 10:30 - 11:20

English (two sections)
Mathematics (two sections) - 11:30 - 12:20

LUNCH - 12:30 - 1:30

Student-Teacher Conferences - 1:30 - 3:00

Recreation - 3:00 - 5:00 (Monday through Friday)

Dinner - 5:30 - 6:00

Study Hour - 7:00 - 9:00

Summer 1961

Breakfast 6:30

Classes in Reading
(six sections to run
concurrently) - 7:30 - 9:20

English (four sections)
Mathematics (three sections) - 9:30 - 10:20

English (four sections)
Mathematics (three sections) - 10:30 - 11:20

LUNCH - 12:30 - 1:30

Student-Teacher Conferences - 1:30 - 3:30

Recreation - 3:30 - 5:30

Dinner - 5:30 - 6:00

Study Hour - 7:00 - 9:00

Appendix H
Plans for Testing

Table 29

Testing Plan for 1959-60

Summer Session, 1959		Freshman Year, 1959-60	
Initial tests (First week)	Final tests (Last week)	Initial tests (Sept.) Nonparticipants	Final tests (May) Participants and Nonparticipants
Cooperative English Tests: Single Booklet Edition (Lower Level) Reading Comprehension, Mechanics of Expression, and Effectiveness of Expression. Form RX	Cooperative English Tests: Single Booklet Edition (Lower Level), Reading Comprehension, Mechanics of Expression, and Effectiveness of Expression. Form RY	Cooperative English Tests: Single Booklet Edition (Lower Level) Reading Comprehension, Mechanics of Expression, and Effectiveness of Expression, Form RX	Cooperative English Tests: Single Booklet Edition (Lower Level Reading Comprehension, Mechanics of Expression, and Effectiveness of Expression Form RY
Cooperative STEP Essay Test, Form 2A	Cooperative STEP Essay Test, Form 2B		
Cooperative Mathematics Pretest for College Students, Form X	Cooperative Mathematics Pretest for College Students, Form Y	Cooperative Mathematics Pretest for College Students, Form X	Cooperative Pretest for College Students, Form Y
Cooperative Mathematics Test for Grades 7, 8, & 9, Form X	Cooperative Mathematics Tests for Grades 7, 8, & 9, Form Y		
Hemnon-Nelson Tests of Mental Ability		Hemnon-Nelson Tests of Mental Ability	

Summer Session, 1959		Freshman Year, 1959-60	
Initial tests (First week)	Final tests (Last week)	Initial tests (Sept.) Nonparticipants	Final tests (May) Participants and Nonparticipants
*California Language Test, Advanced, Grades 9-14 Form W	*California Language Test, Advanced, Grades 9-14 Form X		
*California Mathematics Test, Advanced, Grades 9-14, Form W	*California Mathematics Test, Advanced, Grades 9-14, Form X		

*Used for diagnosis and evaluation by teachers

Table 30

Testing Plan for 1960-61

Summer Session, 1960		Freshman Year, 1960-61	
Initial tests (First week)	Final tests (Last week)	Initial tests (Sept.) Nonparticipants	Final tests (May) Participants and Nonparticipants
Cooperative English Tests Reading Comprehension and English Expression: Form 2A, Lower Level. Single Booklet, 1960 Edition		Cooperative English Tests: Reading Comprehension and English Expression: Form 2A, Lower Level. Single Booklet, 1960 Edition	Cooperative English Tests: Reading Comprehension and English Expression. Form 2B, Lower Level. Single Booklet. 1960 Edition
California Study Methods Survey, Grades 7-13		California Study Methods Survey, Grades 7-13	California Study Methods Survey, Grades 7-13
STEP Mathematics Test, Form 1A	STEP Mathematics Test, Form 1C	STEP Mathematics Test, Form 1A	STEP Mathematics Test, Form 1B
**STEP Reading Test, Form 2A	**STEP Reading Test, Form 2B		
**STEP Mathematics Test, Form 2A	**STEP Mathematics Test, Form 2B		
***California Language Test, Advanced, Grades 9-14, Form W	***California Language Tests, Advanced, Grades 9-14, Form X		
***California Mathematics Test, Advanced, Grades 9-14, Form W	***California Mathematics Test, Advanced, Grades 9-14, Form X		

*Given untimed to all students

**Given untimed to half of the students and timed to the other half. The total group was randomly divided into halves. Each half took one of the tests timed and the other test untimed. For example, the half which took the Language Test timed took the Mathematics Test untimed and vice versa.

***Used for diagnosis and evaluating by teachers.

Table 31

Testing Plan for 1961-62

Summer Session, 1961		Freshman Year, 1961-62	
Initial Tests (First week)	Final tests (Last week)	Initial tests (Sept.) Nonparticipants	Final tests (May) Participants and Nonparticipants
Cooperative English Tests: Reading Comprehension and English Expression: Form 2B, Lower Level. Single Booklet, 1960 Edition		Cooperative English Tests: Reading Comprehension and English Expression: Form 2B, Lower Level. Single Booklet. 1960 Edition	Cooperative English Tests: Reading Comprehension and English Expression. Form 2C, Lower Level. Single Booklet. 1960 Edition
California Study Methods Survey, Grades 7-13		California Study Methods Survey, Grades 7-13	California Study Methods Survey, Grades 7-13
STEP Mathematics Test, Form 1A	STEP Mathematics Test, Form 1C	STEP Mathematics Test, Form 1A	STEP Mathematics Test, Form 1B
*STEP Essay Test, Form 2A, Form 2B	*STEP Essay Test, Form 2B Form 2A	*STEP Essay Test, Form 2A Form 2B	*STEP Essay Test, Form 1A Form 1B
**STEP Reading Test, Form 2A	**STEP Reading Test, Form 2B		

*Administered with revised directions and with forms rotated between randomly selected halves of the experimental group and corresponding halves of the control group.

**Administered untimed to all students.

Appendix I
Personal Reactions Inventory, First Form

PERSONAL REACTIONS INVENTORY FOR SUMMER STUDENTS

COOPERATIVE EXPERIMENTAL SUMMER SCHOOL

1960

College________________________________

Date________________________________

DIRECTIONS: This is not a test. There are no right or wrong answers. Hence, you will not receive a score; in fact, you must not write your name on any of these pages.

This Inventory is made up of twenty statements that have not been completed. If the blank line in each statement were filled in with one of the phrases in the column under the statement, it would be completed. Complete each statement by drawing a circle around the phrase in the column that best makes the statement say what you want it to say.

We will attach a great deal of significance to the information obtained from this Inventory; therefore, it is important that you are honest and frank in completing each statement. You understand that other students like you will participate in this program in the summer of 1961. For this reason, your responses to this Inventory can be very helpful to us in making plans for next summer's students.

1. During this summer, the level of interest and enthusiasm that I have shown toward my studies seems for the most part to have been ______________________ than the level of interest and enthusiasm I showed during my senior year in high school.

   much higher

   slightly higher

   no higher or lower

   slightly lower

   much lower

2. Proportionately, the amount of homework and study I did in connection with classes this summer seems to be ___________________ than the amount I did my senior year in high school.

   a great deal more

   slightly more

   no more or less

   slightly less

   a great deal less

3. In my classes as a whole during this summer I seem to have enjoyed participating in the classroom activities______________________ than I enjoyed participating in my classes during my senior year in high school.

   a great deal more

   slightly more

   no more or less

   slightly less

   a great deal less

4. In most of my classes this summer the competition among students for high-level achievement seems to have been ____________________ than it was last school year among students in most of my classes.

   much stiffer

   slightly stiffer

   no more or less stiff

   slightly less stiff

   much less stiff

5. During this summer the value or importance that I attached to conferences with my teachers seems ______________________ than the value I attached to conferences with my teachers during my senior year in high school.

much greater

slightly greater

no greater or less

slightly less

much less

6. In most of my classes this summer the tendency of students to ask questions and offer comments seemed____________________than the tendency of students to ask questions and offer comments in my classes during the last school year.

much greater

slightly greater

no greater or less

slightly less

much less

7. What I have picked up from students with whom I had classes here seems to suggest that the feelings most of them have toward their teachers this summer are______________________than the feelings most students in my classes last year had toward their teachers.

much more favorable

slightly more favorable

no more or no less favorable

slightly less favorable

much less favorable

8. The quality of deportment or conduct of most of the students whom I have had the opportunity to observe both in and out of class this summer is_______________________than that which was characteristic of most of my classmates in and out of class during last school year.

much better

slightly better

no better or worse

slightly worse

much worse

9. During this summer the amount of time that I found for relaxation and fun each day was ____________________ than the amount of time that I found for relaxation and fun each day my senior year in high school.

   much greater

   slightly greater

   no greater or less

   slightly less

   much less

10. During this summer the frequency with which I had chats or talks with my teachers at times other than during the class period was ____________________________ than the frequency with which I had chats with my teachers outside the class periods during my senior year in high school.

   much greater

   slightly greater

   no greater or less

   slightly less

   much less

11. During this summer I seemed to have been inspired to study ________________________ than I was inspired to study during my senior year in high school.

   a great deal more

   slightly more

   no more or less

   slightly less

   a great deal less

12. The degree of seriousness that I had toward my academic work during this summer seems ____________________ than that which I had toward my academic work last school year.

   much greater

   slightly greater

   no greater or less

   slightly less

   much less

13. During lectures and discussions in most of my classes this summer the attentiveness and alertness shown by the students as a whole seems ____________________ than that shown by students as a whole during lectures and discussions in classes during last school year.

much greater

slightly greater

no greater or less

slightly less

no less

14. It seems that in most of my classes this summer the amount and quality of work that the students must do to get at least a satisfactory grade is ____________________ than the amount and quality of work students were required to do in order to get at least a satisfactory grade in most of my classes last school year.

much higher

slightly higher

no higher or lower

slightly lower

much lower

15. During this summer the frequency with which I had conferences with my teachers was ____________________ than the frequency with which I had conferences with my teachers during last school year.

much greater

slightly greater

no greater or less

slightly less

much less

16. In most of my classes during this summer the proportion of the period during which students were given lectures and explanations by the teacher was, on the average, ____________________ than the proportion of the period during which students were given lectures and explanations by the teachers in most of my classes during last school year.

much larger

slightly larger

no more or no less

slightly smaller

much smaller

17. During this summer the relationship between students and teachers in my classes as a whole seems________________________than was the relationship between students and teachers in my classes as a whole during last school year.

    a great deal closer

    slightly closer

    no more or less close

    slightly less close

    a great deal less close

18. The willingness to follow school or administrative regulations and policies shown by most of the students in my classes this summer seems to be________________________than that which most of the students in my classes last school year seem to have shown.

    much more

    slightly more

    no more or less

    slightly less

    much less

19. This summer it seems that the amount of pressure under which I worked from day to day to complete my assignments was________________________than the amount of pressure that I seemed to have worked under from day to day during school last year.

    much greater

    slightly greater

    no more or less

    slightly smaller

    much smaller

20. The percentage of the teachers of my classes this summer whom I would feel at ease talking with outside of class is probably ________________________than the percentage of my teachers in high school with whom I felt at ease talking with outside of class.

    much greater

    slightly greater

    no greater or less

    slightly less

    much less

Appendix J
Record of Participation in Extra Curricula and Outside Activities During Freshman Year, 1959-60

Student's Name____
Last First Middle

College Clark Morehouse Morris Brown Spelman
Encircle one

Local Residence____

Date____________________

Membership in organizations

(Freshman class, social clubs, musical organizations, athletic organizations, academic organizations, religious organizations, student government, etc.)

Name of organization	Office to which elected or appointed by students	Office to which appointed by faculty
1.		
2.		
3.		
4.		
5.		
6.		
7.		

Participation in other activities

(Special committees, special performances on programs, assignments in connection with projects, programs, etc.)

Name of activity **Brief description of participation**

1.____

____

____

2.____

____

____

3.____

____

____

4.____

____

____

Part-Time Job

Campus or Off Campus

Description of job Number of hours per week Name of supervisor

1.____

2.____

3.____

Appendix K
Directions for Administering and Scoring the Questionnaire Used to Gather Data on Home Background

The questionnaire should be administered in a private setting to one student at the time. The administration of the questionnaire involves three phases -- Introducing, Completing, and Reviewing -- all of which should be finished in one setting. The questionnaire can be administered in about 40 minutes.

Introducing the questionnaire: Optimum conditions for introducing the instrument involve (a) establishing rapport, (b) explaining purposes for administering the instrument, and (c) explaining directions and facilitating understanding of the directions by encouraging the student to ask for help if he should feel the need for it when completing the questionnaire.

Completing the questionnaire: The student should complete the instrument in the presence of the interviewer. The interviewer should give help in explaining directions and in interpreting questionnaire items if the student asks for it. The interviewer should record any of the student's voluntary comments that seem relevant to the questionnaire data.

Reviewing the data: After the student has completed the questionnaire the interviewer should review the data with the student to (a) determine whether all items are completed, (b) clarify (where needed) meanings of the data the student has given, (c) elicit further information, and (d) to note any voluntary comments made by the student that are relevant to the kinds of data sought with the questionnaire.

In general, the interviewer's judgment will suggest where it is necessary to ask questions; however, there are three points at which it is important to have further information; these are as follows:

PART IV, SECTION A, NUMBER 10. Question student and/or check sources to determine whether high school is accredited and the name of the accrediting agency or agencies.

PART IV, SECTIONS A AND B. Ask student for the name of the city or town he has reference to in Section A; this is his hometown. Ask student to give the name or names of the cities or towns he has reference to in Section B; these are cities or towns that he has visited. For both Sections A and B ask the student to tell more about the trips and visits. Ask further questions, if necessary, to reveal information that is needed to assess the stimulation values of such trips and visits.

Record all additional information in the margin near the questionnaire item to which it pertains. Transfer any notes taken during the time that the student was completing the questionnaire to the margin near the item to which it pertains.

The questionnaire data may be interpreted in terms of "A Scale for the Measurement of Social Environment of Negro Youth" developed by Herman Canady.[1] Originally the Scale was employed to assess data gathered by the use of an interview.

"The scale was constructed as follows. Ten judges were asked to name the ten most important environmental factors -- chiefly nonphysical -- which they considered most important to the mental development of Negro youth of high school age. On the basis of these judgments the main areas of influence were determined, and a preliminary scale, with a number of items in each area was constructed. This scale was submitted to several members of the Department of Psychology at Northwestern University for suggestions. Following the suggestions, various modifications were made and the scale administered to six Negro senior high school students, with the result that a number of items had to be discarded and others recast into more workable forms.

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[1] H. Canady and Others, "A Scale for the Measurement of the Social Environment of Negro Youth," The Journal of Negro Education, 11:4-13, 1942. (Permission to use the Scale was granted by Dr. Canady.)

"The items of the scale are rated on a 5-point scale, each step of which is described in the scoring key.... The items' scores range from 5 for the most desirable to 1 for the least desirable condition. A number of auxiliary items may also be secured but are not to be used in the total scoring. Their greatest value lay in making possible a more objective and reliable scoring of the scale items. However, a certain amount of subjective estimate of the situations will enter into the scoring since this represents an approach of the study of the individual. The total possible scores ranges from 17 to 85. The raw score is simply totaled, since it has been found by Stogdill and Leahy that a score derived in such a manner answers most purposes as well as one derived by a more elaborately weighted scoring system.... It has a reliability coefficient of .91 as determined by the split-half method when stepped up by the Sperman-Brown formula. By the same method, Leahy and Sims reported coefficients of .92 and .91 respectively, for their tests."[2]

Items of the Social Environment Questionnaire that Correspond to the Five Dimensions of Canady's Environmental Inventory. Indicated below are items of the Social Environment Questionnaire which, in relationship to other items in the Questionnaire and supplementary data, provide cues for rating the quality of home background in terms of the five dimensions of the scale for the Environmental Inventory developed by Canady.

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[2] Canady and Others, _The Journal of Negro Education_, 9:4-5, 1942.

Scale dimensions	Items corresponding to scale
1. Social Contacts	
Opportunity for contacts with strangers	Part III, Section E, No. 5
Contacts with young people who were ambitious, eager to learn, with good home background habits	Part III, Section E, No. 6
Stimulation value of trips and other opportunities for extension of youth's curiosity and interest	Part IV, Section A and B
2. Extra-curriculum Interest and Activities:	
Youth's participation in extra-curriculum activities in high school	Part III, Section D
Reading outside of school requirements	Part III, Section E, Nos. 1-3
3. Social and Cultural Level of Community:	
Quality of city or town in which youth lives: Policy of segregation	Part IV, Section A
Quality of high school, teachers, and facilities: Quality of elementary school teachers, and facilities	Part I, Section A, Nos. 5-10
4. The Home:	
Stimulation level of the home	Part III, Sections A, B, C, and E, Nos. 2-4
Quality of reading material in home for adults: For youth	Part II, Nos. 17-22; Part III, Section E, Nos. 1-3
Parental participation in social and civic organizations and activities	Part I, Section E
General cultural standards and interests of parents	Part I, Section A, Nos. 1, 2, and 4; Section B, Nos. 1-12; Sections C, D, and E
Modern conveniences in home	Part II, Nos. 1-16
5. Education: Parental Attitude Toward	Part I, Section A, Nos. 11-12

Appendix L
Statistical Data on Reading Tests

Table 32

Comparative Mean Changes of Summer School Participants and Nonparticipants on the Cooperative Reading Comprehension Test Administered in 1959-60

(N = 38)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	36-59	25-77	-27/+20	29-62	23-83	-21/+20	-17/ 16	-19/+20	-21/+19
Mean	47.08	47.90	- .82	51.04	50.30	.74	3.96	2.40	1.56
SD	5.10	10.00	7.71	6.00	10.25	8.23			6.24
SE_D			1.26			1.35			1.01
t			.65			.54			1.44

Note.--A positive difference means that the participant member of a pair made the highest score or the greater gain; a negative difference indicates the reverse.

Table 33

Mean Changes of Participants and Nonparticipants on the Cooperative Reading Comprehension Test Administered in 1960-61

(N = 72)

Statistic	Initial testing June Parti-cipants	Initial testing Nonparti-cipants	Initial testing September Differences between matched pairs	Final testing May Parti-cipants	Final testing Nonparti-cipants	Final testing Differences between matched pairs	Differences from initial to final testing Parti-cipants	Differences from initial to final testing Nonparti-cipants	Differences from initial to final testing Differences between matched pairs
Range	140-164	134-164	-17/+17	142-165	142-166	-14/+13	- 5/+17	- 5/+12	- 5/+17
Mean	149.83	152.25	-2.43	154.39	155.00	.639	4.46	2.67	1.79
SD	5.79	6.44	6.61	5.23	5.63	6.12	4.46	4.11	6.15
SE_D			.779			.721	.526	.464	.724
t			3.04			.885	8.48*	5.52*	2.47*

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 34

Comparative Mean Changes of Summer School Participants and Nonparticipants on the Cooperative Reading Comprehension Test Administered in 1961-62

(N = 56)

Statistic	Initial testing June September			Final testing May			Differences from initial to final testing		
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	136-160	136-163	-15/+10	141-168	136-164	-13/+15	- 2/+15	- 8/+11	-11/+18
Mean	147.75	149.66	-1.91	153.78	152.11	1.67	6.04	2.45	3.59
SD			5.94			6.08	3.74	3.80	5.60
SE_D			.794			.812	.50	.51	.748
t			2.41*			2.06*	12.80*	4.82*	4.80*

Note.--A positive difference means that the participant member of a pair made the highest score or the greater gain; a negative difference means the opposite.

*Significant at or beyond the .05 level.

Appendix M
Statistical Data on English Tests

Table 35

Comparative Mean Changes of Summer School Participants and Nonparticipants on the Mechanics of Expression Test of the Cooperative English Tests Administered in 1959-60

(N = 45)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September		May				
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	29-72	30-74	-21/+32	35-76	33-75	-12/+29	29-60	15-60	-21/+17
Mean	49.00	47.33	1.67	58.33	53.00	5.33	9.33	5.67	3.66
SD	10.15	9.90	9.75	8.28	9.30	10.73			10.25
SE_D			1.47			1.62			1.55
t			1.13			3.29*			2.36*

Note.--A positive difference means that the participant member of a pair made the higher score or the greater gain; a negative difference means the opposite.

*Significant at or beyond .05 level.

Table 36

Comparative Mean Changes of Summer School Participants and Nonparticipants on the Effectiveness of Expression Test of the Cooperative English Tests Administered in 1959-60

(N = 45)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	29-60	15-60	-21/+17	29-66	29-63	-15/+20	-17/+20	-21/+15	-20/+20
Mean	44.14	43.54	.60	48.40	45.94	2.46	4.26	2.40	1.86
SD			8.24			7.69			7.96
SE_D			1.24			1.16			1.18
t			.48			2.10*			1.57

Note.--A positive difference means that the participant member of a pair made a higher score or the greater gain; a negative difference means the opposite.

*Significant at or beyond .05 level.

Table 37

Mean Changes of Participants and Nonparticipants on the

Expression Test of the 1960 Cooperative English

Tests Administered in 1960-61

(N = 72)

Statistic	Initial testing June–September			Final testing May			Differences from initial to final testing		
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	138-169	136-174	-27/+21	139-172	143-177	-19/+20	- 8/+17	-10/+ 7	-14/+18
Mean	152.29	152.71	-.42	156.64	155.56	1.08	4.35	2.85	1.50
SD	6.66	6.74	8.55	5.74	6.54	7.50	5.12	5.22	7.82
SE_D			1.01			.883	.603	.615	.921
t			-.413			1.22	7.21*	4.63*	1.63

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 38

Mean Changes of Participants and Nonparticipants on the Expression Test of the 1960 Cooperative English Tests Administered in 1961-62

(N = 56)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	135-168	139-164	-25/+16	143-171	139-167	-12/+19	- 8/+17	- 9/+12	-13/+20
Mean	150.20	151.57	1.37	156.52	154.61	1.91	6.32	3.04	3.28
SD	7.72	6.48	9.06	6.66	6.26	8.28	5.56	4.66	7.25
SE_D			1.21			1.11	.748	.627	.968
t			1.13			1.72*	8.45*	4.34*	3.39*

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Appendix N
Statistical Data on Mathematics Tests

Table 39

Mean Changes of Participants and Nonparticipants on the

Cooperative Mathematics Pretest for College

Students Administered in 1959-60

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September		May				
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	0-37	0-22	-12/+29	1-35	0-23	-12/+26	-10/+21	-12/+20	-12/+13
Mean	13.36	10.17	3.19	16.50	10.41	6.09	3.14	.24	2.90
SD	6.60	5.34	8.81	7.50	5.10	8.35			5.92
SE_D			1.30			1.30			.91
t			2.27*			4.59*			3.17*

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 40

Mean Changes of Participants and Nonparticipants on

the STEP Mathematics Test Administered in 1960-61

(N = 57)

Statistic	Initial testing June		Initial testing September	Final testing May			Differences from initial to final testing		
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	230-303	230-293	-40/+35	243-306	265-299	-29/+32	-19/+46	-9/+42	-40/+42
Mean	274.31	275.86	-1.55	282.07	281.14	.931	7.76	5.28	2.48
SD	13.80	12.00	16.10	14.47	8.34	15.77	15.65	12.45	20.66
SE_D			2.98			2.93	2.91	2.31	3.84
t			.520			.317	2.67	2.29	.646

Note.--A positive difference means that the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

4

Table 41

Mean Changes of Participants and Nonparticipants on the

STBP Mathematics Test Administered in 1961-62

(N = 30)

Statistics	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	242-265	230-298	-43/+55	265-306	252-294	-14/+39	-16/+40	-23/+46	-49/+38
Mean	269.47	273.17	-3.70	280.00	277.47	2.53	10.53	4.30	6.23
SD	10.75	15.34	19.85	8.92	10.19	11.70	12.96	13.90	18.41
SE_D			3.62			2.13	2.36	2.54	3.36
t			1.02			1.19	4.46*	1.69	1.85*

Note.--A positive difference means that the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Appendix O
Statistical Data on the California Study Methods Survey

Table 42

Mean Changes of Participants and Nonparticipants on the Attitudes Toward School Test Administered in 1960-61

(N = 57)

Statistic	Initial testing June		September	Final testing May			Differences from initial to final testing		
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	33-73	37-71	-22/+20	33-63	33-73	-36/+21	-22/+25	-26/+11	-26/+26
Mean	53.81	53.82	.01	48.42	50.89	-2.47	-5.83	-2.93	-2.46
SD	6.78	7.48	10.00	6.92	8.13	10.08	8.94	7.11	10.98
SE_D			1.32			1.34	1.06	.94	1.45
t			.013			1.85	5.06*	3.11*	1.70*

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 43

Mean Changes of Participants and Nonparticipants on the Mechanics of Study Test Administered in 1960-61

(N = 57)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Parti- cipants	Nonparti- cipants	Differences between matched pairs	Parti- cipants	Nonparti- cipants	Differences between matched pairs	Parti- cipants	Nonparti- cipants	Differences between matched pairs
Range	37-71	45-73	-26/+18	42-73	45-67	-20/+24	-29/+18	-10/+17	-28/+26
Mean	55.09	56.70	-1.61	58.18	57.78	.40	3.09	1.07	2.02
SD	6.83	6.21	10.11	6.88	6.18	9.81	8.92	6.85	10.90
SE_D			1.34			1.30	1.16	.907	1.44
t			1.20			.311	2.61*	1.18	1.40

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 44

Mean Changes of Participants and Nonparticipants on the
Planning and System Test Administered in 1960-61
(N = 57)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	33-73	27-73	-31/+29	27-73	37-73	-44/+34	-26/+21	-26/+24	-26/+25
Mean	53.51	57.40	-3.89	54.68	56.38	-1.70	1.17	-1.02	2.19
SD	8.85	10.11	14.24	9.69	10.05	14.95	10.65	9.69	12.42
SE_D			1.87			1.98	1.41	1.28	1.64
t			2.06*			- .859	1.20	.797	1.33

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 45

Mean Changes of Participants and Nonparticipants on the California Study Methods Survey, Total Score, Administered in 1960-61

(N = 57)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	42-71	42-73	-29/+21	37-67	37-67	-18/+21	-21/+17	-20/+13	-19-/+17
Mean	54.79	56.40	-1.61	53.82	54.96	-1.14	- .965	-1.44	.474
SD	6.63	6.68	9.98	6.20	6.34	9.16	7.69	6.02	8.98
SE_D			1.32			1.21	1.02	.797	1.19
t			1.22			.942	.946	1.81*	.395

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 46

Mean Changes of Participants and Nonparticipants on the Attitude Toward School Test Administered in 1961-62

(N = 48)

Statistic	Initial testing			Final testing			Differences from initial to final testing		
	June		September	May					
	Parti-cipants	Nonparti-cipants	Differences between matched pairs	Parti-cipants	Nonparti-cipants	Differences between matched pairs	Parti-cipants	Nonparti-cipants	Differences between matched pairs
Range	29-67	29-67	-38-/+34	33-71	33-71	-21/+23	-20/+21	-16/+17	-21/+30
Mean	54.19	52.85	1.33	48.92	49.17	-.25	-5.27	-3.69	-1.58
SD	8.97	9.42	13.71	7.56	9.57	12.04	8.08	7.83	11.14
SE_D			1.98			1.74	1.16	1.13	1.61
t			.671			-.144	3.38*	3.26*	-.985

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 47

Mean Changes of Participants and Nonparticipants on the Mechanics of Study Test Administered in 1961-62

(N = 48)

Statistic	Initial testing June		September	Final testing May			Differences from initial to final testing		
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	37-73	29-73	-26/+26	45-73	37-63	-16/+23	-13/+12	-13/+16	-17/+22
Mean	56.54	56.35	.19	58.33	55.60	2.73	1.79	-0.75	2.54
SD	7.62	9.63	12.81	6.22	5.50	9.71	6.36	6.88	9.45
SE_D			1.85			1.40	.917	.992	1.36
t			1.01			1.95*	1.95*	- .756	1.86*

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant

Table 48

Mean Changes of Participants and Nonparticipants on the Planning and System Test Administered in 1961-62

(N = 48)

Statistic	Initial testing June	September		Final testing May			Differences from initial to final testing		
	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs	Participants	Nonparticipants	Differences between matched pairs
Range	29-73	29-73	-31/+31	42-73	29-73	-28/+34	-26/+24	-34/+16	-32/+37
Mean	57.23	57.85	.62	57.02	55.08	1.94	-0.21	-2.77	2.56
SD	10.02	11.22	14.57	9.60	12.54	15.95	10.78	9.99	13.48
SE_D			2.10			2.30	1.56	1.44	1.94
t			- .298			- .842	.133	1.92*	1.32

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Table 49

Mean Changes of Participants and Nonparticipants on California Study Methods Survey, Total Score, Administered in 1961-62

(N = 48)

Statistic	Initial testing June: Participants	Initial testing: Nonparticipants	Initial testing September: Differences between matched pairs	Final testing May: Participants	Final testing May: Nonparticipants	Final testing May: Differences between matched pairs	Differences from initial to final testing: Participants	Differences from initial to final testing: Nonparticipants	Differences from initial to final testing: Differences between matched pairs
Range	37-71	27-67	-25/+34	45-73	33-71	-18/+30	-14/+10	-17/+14	-18/+17
Mean	56.83	56.21	.62	54.81	53.37	1.44	-2.02	-2.83	0.81
SD	7.92	9.66	13.45	7.56	8.25	11.66	6.43	6.38	8.80
SE_D			1.94			1.68	.927	.920	1.27
t			.322			.855	2.17*	3.08*	.639

Note.--A positive difference means the participant member of the pair made the higher score or the greater gain; a negative difference indicates the opposite.

*Significant at or beyond .05 level.

Appendix P

Statistical Data on the Personal Reactions Inventory

Table 50

Chi Square Applied to Results From the Personal Reactions Inventory Administered to Students at the End of the 1960 and 1961 Summer Sessions

(1960, N=96; 1961, N=89)

Number of Inventory Item	August, 1960				August, 1961			
	Number of responses in each category				Number of responses in each category			
	—	0	+	Chi square	—	0	+	Chi square
1	11	10	75	84.02	8	6	75	104.55
2	10	6	80	108.24	8	7	74	99.61
3	15	31	50	19.18	8	14	67	71.23
4	5	11	80	108.56	8	18	63	57.99
5	9	12	75	86.81	1	9	79	53.70
6	12	23	61	41.31	11	26	52	29.08
7	22	54	20	22.74	3	44	42	.28*
8	1	33	62	8.17	5	31	53	39.60
9	62	12	22	43.74	49	11	29	24.52
10	37	24	35	3.06*	31	15	43	13.93
11	2	6	88	66.66	4	2	83	66.62
12	2	11	83	51.04	2	8	79	53.70
13	4	10	82	48.17	5	9	75	104.41
14	5	3	88	66.66	3	8	78	50.44
15	13	10	73	78.93	3	8	78	50.44
16	8	18	70	69.24	8	12	69	78.66
17	26	35	35	1.68*	12	35	41	15.99
18	3	27	66	13.50	8	19	61	53.40
19	4	10	82	48.17	4	6	78	52.54
20	47	38	11	21.93	23	35	30	2.48*

Note.--Plus category indicates responses "favoring" the summer program and the minus category indicates a response favoring the senior year of high school except in item 9 where the reverse is true.

*Nonsignificant values. All other chi squares are significant at or beyond .05 level.

Table 51

Chi Square Test Applied to Results From the Personal Reactions Inventory Administered to Summer School Participants at the End of the 1959-60, 1960-61, and 1961-62 School Years

(1959-60, N=74; 1960-61, N=86; 1961-62, N=65)

Number of Inventory Item	May, 1960				May, 1961				May, 1962			
	Number of responses in each category				Number of responses in each category				Number of responses in each category			
	—	0	+	Chi square	—	0	+	Chi square	—	0	+	Chi square
1	17	8	49	36.02	18	14	54	34.82	15	13	37	16.35
2	9	3	62	82.32	9	13	64	65.53	6	2	57	36.94
3	14	29	31	7.00	22	26	38	4.82*	18	17	30	4.83*
4	15	17	42	18.36	14	15	57	41.48	10	18	37	17.74
5	14	21	39	13.48	33	20	33	3.92*	22	12	31	8.31
6	30	14	30	6.92	23	17	46	16.32	22	14	29	4.90*
7	35	32	7	17.80	34	34	18	5.95*	30	21	14	6.12
8	27	38	9	16.70	31	45	10	22.07	19	35	11	13.75
9	51	9	14	41.95	63	7	16	63.02	55	5	5	76.80
10	29	16	29	4.51*	45	17	24	14.79	30	14	21	6.12

Table 51 - Continued

Number of Inventory Item	May, 1960 Number of responses in each category				May, 1961 Number of responses in each category				May, 1962 Number of responses in each category			
	—	0	+	Chi square	—	0	+	Chi square	—	0	+	Chi square
11	17	14	43	20.43	16	23	47	18.42	11	11	43	31.46
12	12	12	50	38.81	11	22	53	33.04	13	14	38	18.46
13	30	28	16	4.59*	32	31	23	5.10*	19	27	19	1.95*
14	10	25	39	16.97	13	23	50	25.52	7	14	44	35.61
15	31	19	24	2.94*	59	5	22	51.55	35	7	23	18.18
16	26	23	25	.19*	29	18	39	7.58	13	20	32	8.51
17	41	22	11	18.58	55	14	17	36.40	35	14	16	12.38
18	24	30	20	2.03*	44	28	14	15.70	31	25	9	11.91
19	14	10	50	39.14	21	8	57	44.91	7	12	46	17.01
20	33	28	13	8.72	36	27	23	3.09*	25	25	15	3.07*

Note.--Plus category indicates responses "favoring" the freshman year and the minus category indicates a response favoring the summer program except in item number 9, where the reverse is true.

*Nonsignificant values. All other chi squares are significant at or beyond .05 level.

Appendix Q
Summary of Responses to the Sentence Completion Exercise

Table 52

Summary of Responses to the Sentence Completion Exercise for Students in the 1961 Summer Program

Number of item	Sentence completion item	Summary of responses to item	Per cent of responses
1.	One of the things that many of the students griped about was	a. homework (too much, not enough time to complete, writing themes)	52
		b. campus and dormitory rules and regulations, dormitory supervision, (too many restrictions and compulsory activities)	23
		c. teaching methods employed by teachers; conference and clinic	13
		d. early morning schedule	5
		e. food served in dining halls	5
		f. nothing	1
2.	Many of the students often expressed satisfaction about	a. the teachers and their teaching	63
		b. recreational and cultural activities	13
		c. acquiring new learnings and achieving success in their school work	10
		d. the food served in the dining halls	6
		e. the "break", the campus, Sunday vesper, free time in afternoon, going home	5
		f. the program as a whole and the opportunity to participate in it	2

Table 52 - Continued

Number of Item	Sentence completion item	Summary of responses to item	Per cent of responses
3.	Conference with teachers	a. were essential and beneficial (provided individual aid, cleared up difficulties, helped teachers and students know each other)	92
		b. were profitable but English clinic held too often	2
		c. were entirely too long; often boring; disliked	6
4	The daily schedule	a. was perfect, just right, balanced, convenient	61
		b. was satisfactory except for early morning and late afternoon classes; helpful but tight and stiff, and hard to adjust to at the beginning	15
		c. was tiring, too crowded, messed-up, hard, sometimes too much and other times too little	22
		d. was much different from high school	1
5.	As I saw it, the relationship that existed among the teachers	a. was friendly, family-like, inspiring	81
		b. was all right, about average, some closer than others, about like in high school	8
		c. and students was close, informal, harmonious, far better than in high school	8
		d. and students should have been closer, some were afraid to express their opinions to teachers, some teachers were partial	3
6.	As a whole, the students got along with one another	a. cooperatively, in perfect accord, like brothers and sisters	93
		b. all right, fairly well, as well as could be expected	7

Table 52 - Continued

Number of item	Sentence completion item	Summary of responses to item	Per cent of responses
7.	In general, the amount of work we were expected to do	a. was just right, sufficient, appropriate; fitted our needs, helped us grasp the feeling of college assignments; not too much; was what I expected	53
		b. was a lot, hard, but helpful and necessary	5
		c. was sometimes too much, in some cases too much, a little stiff after a year of drifting; more than in high school, a great deal more	15
		d. was too much, too hard, far beyond the group, an awful lot, a great deal	15
		e. was not enough, less than I expected, not enough in mathematics, small in comparison to high school	11
8.	The classrooms	a. had friendly, informal atmosphere; were suitable for study; stimulated thinking; contained all necessary materials, were delightful, clean, orderly; not crowded	83
		b. were adequate except for poorly lighted reading room; were comfortable except the math room which was too hot; were supplied with sufficient materials except there were no English textbooks	7
		c. were small, hot and stuffy	9
		d. were like my high school classrooms	1
9.	The food served in the dining hall	a. was delicious, excellent, healthy, good 7 days per week, well planned, served in an appealing way	55
		b. was fair	
		c. was delicious sometimes but sometimes bad; good but not plentiful, not right for the season, not varied	24

Table 52 - Continued

Number of item	Sentence completion item	Summary of responses to item	Per cent of responses
		d. was awful, terrible, very very very poor, not sufficient	8
10.	My roommate	a. was a best friend, a swell girl, an all right fella, my pick, wonderful, considerate, quiet, nice	84
		b. was good at heart but untidy; was nice to know but not considerate of my study habits	3
		c. was fair, was nothing to brag about	3
		d. was domineering, not clean, atypical; prevented my studying, snored, got on my nerves	9
11.	Living in the dormitory	a. was a new, pleasant, enriching experience: taught me to reason before acting, gave me a new outlook on people, will help me this fall	79
		b. was difficult at first but I liked it; was fun but confining; was O.K. but didn't like supervisor	6
		c. just wont do; presented problems; had its ups and downs; was pretty dull	15
12.	The recreation program	a. provided pleasurable leisure-time activities; for all; fitted my designs perfectly; was well-planned, enjoyable, relaxing; was one of the highlights of the program, really on the ball	75
		b. was all right, pretty good	3
		c. was fine but lessons interfered, was good but needed more dances, more supervision, more activities the last two weeks	17

Table 52 - Continued

Number of item	Sentence completion item	Summary of responses to item	Per cent of responses
		d. was not good as it could have been; was too short, poor, not inclusive enough	4
13.	The book reviews and plays we attended	a. helped me appreciate fine arts; stimulated me me to read more; were new experiences that I learned to enjoy; were wonderful, inspirational, cultural, educational, the best I've seen	93
		b. the plays were good but book reviews dull	3
		c. were boring and dull	3
14.	The fellows in the group	a. were intelligent, mature, thoughtful; were a swell bunch, nice guys, respectful to girls; were mad! had lots of good clean fun	77
		b. were like fellas, okay, all types; were different from those in high school	7
		c. were unfriendly at first but became friendly later; were all right but some had bad attitudes; were friendly but loud; some were immature while others were not	9
		d. were too childish, immature, a little shy; were carefree and lacking in seriousness; were always running their mouths	7
15.	The girls in the group	a. were intelligent, mature, challenging, concerned about tasks; reflected good home backgrounds; were sweet, lovable, ladies; got along nicely, more mature and serious than boys	85

Table 52 - Continued

Number of item	Sentences completion item	Summary of responses to item	Per cent of responses
		b. were about like average girls, okay, fair	5
		c. no comment, can't speak for them	1
		d. were friendly but had some small arguments; were friendly but moody at times; were friendly with a few exceptions	6
		e. included some who were shy and timid, were especially not my type	2
16.	The tests we took during the first week	a. helped to discover our strengths and weaknesses; gave a feeling of what college is like	22
		b. were okay, were not too difficult and strenuous	5
		c. were tiring but interesting; were easy except for mathematics; were laborious but necessary; not complicated but long	21
		d. were disliked by many; were rugged, difficult, long and stiff, unnecessary, a shock; were not indicators of our ability	52
17.	The tests that we have been taking over the last few days	a. were informative, interesting, challenging, important; helpful, showed our progress, valuable to the colleges	17
		b. were all right, not too difficult	5
		c. were easy, good, except for math; were all right but I didn't do my best; were hard but I did better than on first; were not quite as tiring as first but stiff in some areas	19
		d. were easier than first	17

Table 52 - Continued

Number of item	Sentences completion item	Summary of responses to item	Per cent of responses
		e. were different from first	1
		f. were hard, dull, inappropriate, far different from what we did in class, out of this world, even more difficult than first	40
18.	I believe that most of the students felt that the teachers	a. were kind, lenient, helpful, patient, considerate, understanding, devoted, well-trained, inspiring, honest with students, students' best friends	84
		b. were okay, all right	2
		c. were putting too much on them in the beginning until they discovered they were challenging their best efforts	1
		d. were too formal, strict, exact, demanding, tough, a little rough; were going crazy over giving long assignments	12
19.	The director of our school	a. was nice, considerate, helpful, understanding, highly intelligent, quite efficient, humorous, well-rounded, the most pleasant and inspiring person I know, always available, fun to be around	79
		b. was Dr. Barksdale	12
		c. was helpful but I didn't agree with him on some of his directions	1
		d. was not an acquaintance of mind, not around enough; expected too much	7

Table 52 - Continued

Number of item	Sentences completion item	Summary of responses to item	Per cent of responses
20.	The teaching assistants	a. were helpful to teachers and students, well-prepared, extremely nice, understanding, diligent	72
		b. were Miss Wood, Miss Thorn, Mr. Thomas	3
		c. --didn't have one	19
		d. were hard but needed	1
		e. could have been left off; didn't help much; were boring compared to regular teachers, treated us like junior high school children	5
21.	Since being here this summer, I	a. have gained much academically and socially; increased my knowledge in many areas, in English, mathematics, reading, writing, study-skills; am amazed over learning to write a little; am better prepared for college; feel I can do college work commendably; learned much more than in high school	66
		b. have a more mature interest in my work; have become inspired to do my best in all endeavors; am more aware of an education; am willing to further my education without fear; have learned the value of time, a sense of responsibility; have become a better man; have found out more about myself	18
		c. have learned to live with people, to respect the rights of others; have made new friends, met many interesting -- some strange -- people	8
		d. have enjoyed it; have enjoyed myself; have had a grand experience that I'll never forget	8

Table 52 - Continued

Number of item	Sentences completion item	Summary of responses to item	Per cent of responses
22.	One of the things about the summer program that I	liked-enjoyed:	
		a. was my reading class, English class mathematics class, the courses	30
		b. was my teachers, their efforts, methods, relationship to students; was my English teacher, reading teacher; was the director-teacher-student relationship	21
		c. that I learned a great deal in a shorter time than before; that I learned a lot; that I found out what college was like	4
		d. the recreation program and activities, plays and book reviews	10
		e. the friendly atmosphere, togetherness, the spirit of the students to better themselves, the wonderful people, meeting new friends	8
		f. dormitory life	5
		g. the benefits of the program, the way it strives to help you at all points, the opportunities it gives you	5
		disliked:	
		a. was excessive study, homework; the consistent writing of themes; the conferences; the two-hour clinical sessions	5
		b. was compulsory attendance to certain activities, to Sunday morning worship; not being able to go home on week-ends; having to live on campus	6
		c. was getting up early, recreation, inefficient method of relaying important notices	3